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LEGISLATIVE HISTORY

Public Law 329--78th Congress

Chapter 234--2d Session

H. R. 3570

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DIGEST OF PUBLIC LAW 329

HUNGRY HORSE DAM. Authorizes partial construction of Hungry Horse Dam, Montana. (Involves reconstruction of roads, etc., over national forest lands).

INDEX AND SUMMARY OF HISTORY ON H. R. 3570

November 1, 1943	S. 1496 introduced by Senator Wheeler and referred to the Senate Committee on Irrigation and Reclamation. (Companion bill). Print of the bill as introduced.
	H. R. 3570 introduced by Rep. Mansfield and referred to the House Committee on Irrigation and Reclamation. Print of the bill as introduced.
February 1, 1944	Hearings: House, H. R. 3570.
February 24, 1944	House Committee reported H. R. 3570 with amendment. House Report 1193. Print of the bill as reported.
March 23, 1944	House Rules Committee reported House Resolution 481 for the consideration of H. R. 3570. House Report 1278. Print of the Resolution.
April 20, 1944	Debated in House and passed as reported.
April 24, 1944	H. R. 3570 referred to the Senate Committee on Irrigation and Reclamation. Print of the bill as referred.
May 8, 1944	Senate Committee reported H. R. 3570 with amendment. Senate Report 862. Print of the bill as reported.
May 25, 1944	Debated and passed Senate as reported.
May 26, 1944	House agreed to Senate amendments.
June 5, 1944	Approved. Public 329.
	House Document 643. Hungry Horse Dam, Mont.

Place
and
table

78TH CONGRESS
1ST SESSION

S. 1496

IN THE SENATE OF THE UNITED STATES

NOVEMBER 1 (legislative day, OCTOBER 25), 1943

Mr. WHEELER (for himself and Mr. MURRAY) introduced the following bill;
which was read twice and referred to the Committee on Irrigation and
Reclamation

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That for the purpose of providing additional storage for water
4 which shall be used for (1) the generation of electric energy
5 urgently needed for the war effort, and (2) the irrigation
6 and reclamation of arid lands, and other beneficial uses,
7 primarily in the State of Montana but also in downstream
8 areas, the Secretary of the Interior is authorized and directed
9 to proceed immediately with the construction of the pro-

1 posed Hungry Horse Dam (including facilities for gener-
2 ating electric energy) on the South Fork of the Flathead
3 River, Flathead County, Montana, to such a height as may
4 be necessary to immediately impound approximately one
5 million acre-feet of water.

6 SEC. 2. The Secretary of the Interior is authorized to
7 complete, as soon as the necessary additional material is
8 available, the construction of the Hungry Horse Dam so as
9 to provide a storage reservoir with an ultimate capacity of
10 approximately one million five hundred thousand acre-feet
11 of water.

12 SEC. 3. There are authorized to be appropriated such
13 sums as may be necessary to carry out the purposes of this
14 Act.

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

By Mr. WHEELER and Mr. MURRAY

NOVEMBER 1 (legislative day, OCTOBER 27), 1943

Read twice and referred to the Committee on
Irrigation and Reclamation

78TH CONGRESS
1ST SESSION

H. R. 3570

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 1, 1943

Mr. MANSFIELD of Montana introduced the following bill; which was referred to the Committee on Irrigation and Reclamation

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

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6 and reclamation of arid lands, and other beneficial uses, pri-
7 marily in the State of Montana but also in down-stream areas,
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9 proceed immediately with the construction of the proposed

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2 tric energy) on the South Fork of the Flathead River, Flat-
3 head County, Montana, to such a height as may be necessary
4 to impound immediately approximately one million acre-
5 feet of water.

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7 complete, as soon as the necessary additional material is avail-
8 able, the construction of the Hungry Horse Dam so as to
9 provide a storage reservoir with an ultimate capacity of ap-
10 proximately one million, five hundred thousand acre-feet of
11 water.

12 SEC. 3. There are authorized to be appropriated such
13 sums as may be necessary to carry out the purposes of this
14 Act.

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

By Mr. MANSFIELD of Montana

NOVEMBER 1, 1943

Referred to the Committee on Irrigation and Reclamation

ORIGINAL ARTICLES

THE TREATMENT OF
TUBERCULOSIS
BY
DR. J. H. HARRIS

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TUBERCULOSIS

BY
DR. J. H. HARRIS

A BILL

FOR AN ACT TO AMEND THE
ACTS OF THE GENERAL ASSEMBLY
RELATIVE TO THE
REGISTRATION OF
MARRIAGES

DEPARTMENT OF AGRICULTURE
OFFICE OF BUDGET AND FINANCE

HUNGRY HORSE DAM PROJECT

HEARINGS

BEFORE THE

COMMITTEE ON IRRIGATION AND RECLAMATION HOUSE OF REPRESENTATIVES

SEVENTY-EIGHTH CONGRESS

SECOND SESSION

ON

H. R. 3570

A BILL TO PROVIDE AS AN EMERGENCY WAR PROJECT
FOR THE PARTIAL CONSTRUCTION OF THE HUNGRY
HORSE DAM ON THE SOUTH FORK OF THE FLAT-
HEAD RIVER IN THE STATE OF MONTANA,
AND FOR OTHER PURPOSES

FEBRUARY 1, 3, 4, 1944

Printed for the use of the Committee on Irrigation and Reclamation



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WASHINGTON : 1944

COMMITTEE ON IRRIGATION AND RECLAMATION

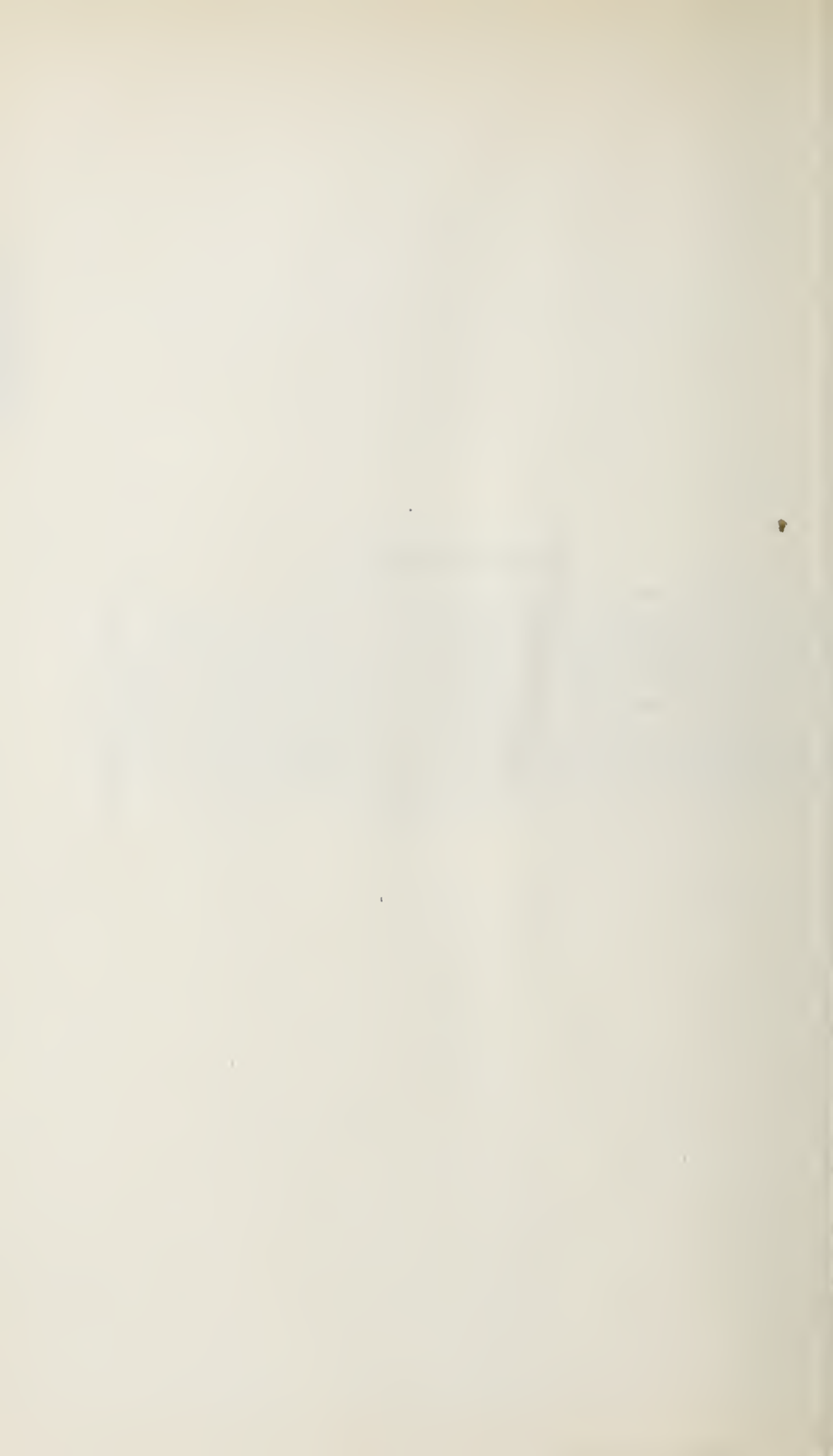
COMPTON I. WHITE, Idaho, *Chairman*

J. W. ROBINSON, Utah	DEWEY SHORT, Missouri
JOHN R. MURDOCK, Arizona	ROBERT F. ROCKWELL, Colorado
JAMES F. O'CONNOR, Montana	WILLIAM LEMKE, North Dakota
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GEORGE E. OUTLAND, California	FRANK A. BARRETT, Wyoming
WILLIAM L. DAWSON, Illinois	WALT HORAN, Washington

JOHN McBRIDE, *Committee Clerk*

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HUNGRY HORSE DAM

TUESDAY, FEBRUARY 1, 1944

HOUSE OF REPRESENTATIVES,
COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C.

The committee met at 10:15 a. m., Hon. Compton I. White (chairman) presiding.

The CHAIRMAN. The committee will come to order. The meeting this morning is called for the consideration of H. R. 3570, a bill introduced by Mr. Mansfield, of Montana, to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes. As the bill is quite short, I will read it for the benefit of the members of the committee and the witnesses [reading]:

[H. R. 3570, 78th Cong., 1st sess.]

A BILL To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of providing additional storage for water which shall be used for (1) the generation of electric energy urgently needed for the war effort, and (2) the irrigation and reclamation of arid lands, and other beneficial uses, primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed immediately with the construction of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Montana, to such a height as may be necessary to impound immediately approximately one million acre-feet of water.

SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir with an ultimate capacity of approximately one million five hundred thousand acre-feet of water.

SEC. 3. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

This bill has been submitted to the Department of the Interior, to the Department of Agriculture, and to the Power Commission for reports; and I will request that the clerk step forward and read at this time the report from the Department of Agriculture.

The CLERK (reading):

DEPARTMENT OF AGRICULTURE,
Washington, January 22, 1944.

HON. COMPTON I. WHITE,
*Chairman, Committee on Irrigation and Reclamation,
House of Representatives.*

DEAR MR. WHITE: This is in further reply to your request of November 20, 1943, for a report on H. R. 3570, a bill to provide as an emergency war project for the

partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

This bill would provide for immediate partial construction of a dam, including facilities for generating electric energy, on the South Fork of the Flathead River in the State of Montana to be known as the Hungry Horse Dam, and for completion of the dam as soon as necessary materials are available.

Construction of a dam at the Hungry Horse site was considered last spring in connection with an indicated need for providing additional storage on the tributaries of the Columbia River above the Grand Coulee and Bonneville power plants to make possible an increased firm power output from these plants. Various sites were investigated at that time by the United States Engineer Department, War Department. Western Montana people expressed disapproval, at a public hearing last June, of a proposal to provide additional storage by dredging the outlet or raising the level of Flathead Lake but indicated a favorable attitude toward construction of the Hungry Horse project which would be situated upstream from Flathead Lake. Construction of the Hungry Horse Dam would not reduce agricultural production as would result from inundation of cultivated lands near Flathead Lake if the level of that lake were raised.

We understand that storage is not required at Hungry Horse for irrigation of nearby lands but that the principal relationship to irrigation of a dam at the Hungry Horse site would be the power it might provide for pumping.

It is our understanding that the United States Engineer Department has prepared a plan for a dam with water elevation of 3,475 feet at the Hungry Horse site, with a maximum reservoir draw-down of 150 feet and usable storage of 1,440,000 acre-feet, and that the Federal Power Commission has recommended a higher dam with water elevation of 3,525 feet and a maximum reservoir draw-down of 125 feet and usable storage of 1,700,000 acre-feet.

The construction of a dam in accordance with either of these plans, or an alternate one as indicated in the bill, would result in inundation of several thousand acres of Flathead National Forest land which this Department has responsibility for administering. A considerable mileage of roads, telephone lines, and other improvements required in administration of the adjacent national forest area would also be covered with water. It would make little difference which plan might be followed from the standpoint of the effect upon managing adjacent national forest land. The principal difference would be in the different length of roads and telephone lines to be replaced.

On the basis that a dam to maximum water elevation of 3,525 feet were built, 16,000 acres of land, valued at an estimated \$73,750 for timber production, would be inundated. About 93,000,000 board-feet of commercial timber, with a present appraised stumpage value of \$274,000 would have to be removed or it would be destroyed and nearly 6,000 acres of reproduction would be destroyed. The only practicable route for hauling out timber products from the million-odd acres of national forest land above the dam site is downstream by road and access to the area for fire protection, recreation, and other purposes is by such roads. It would be necessary to construct 85 miles of road, 46 miles of telephone line, and certain administrative buildings required for protection, administration, and utilization of the adjacent national forest area upstream from the dam site to replace present facilities which would be inundated. This would cost \$825,000.

Since the primary purpose of the proposed Hungry Horse Dam appears to be to develop power, this Department is not in a position to comment on the necessity for its construction as a wartime project. However, from the standpoint of its relationship to programs for which this Department has responsibility, we have no objection to passage of the bill if means are provided for replacement of the roads, telephone lines, and administrative buildings as indicated above in the event the dam is constructed.

The Bureau of the Budget advises that, "While there would be no objection by this office to the presentation of your proposed report on the bill, it is not believed that this project could be satisfactorily justified as an emergency war project, and that, since the President has given approval to the current construction of public works only when they are essential to the war effort, the enactment of the bill, H. R. 3570, should not be considered to be in accord with the President's program."

Sincerely,

CLAUDE R. WICKARD,
Secretary.

The CHAIRMAN. The reason that I have requested the clerk to read the Secretary's letter is that it is a complete report.

I am now going to ask the clerk to read a letter from the Bureau of Reclamation.

The CLERK (reading):

DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, January 28, 1944.

Hon. COMPTON I. WHITE,
House of Representatives.

DEAR MR. WHITE: Secretary Ickes has referred to me your letter of January 17 relating to the hearing on February 1 before the House Irrigation and Reclamation Committee on H. R. 3570 to provide an emergency war project for the partial construction of Hungry Horse Dam on the South Fork of the Flathead River in Montana. Assistant Commissioner William E. Warne will represent me at this hearing and will present any statement the Bureau is prepared to make at that time.

Very truly yours,

H. W. BASHORE, *Commissioner.*

The CHAIRMAN. We also have a report from the Power Commission which I will ask the clerk to read.

The CLERK (reading):

FEDERAL POWER COMMISSION,
Washington, January 22, 1944.

Hon. COMPTON I. WHITE,
*Chairman, Committee on Irrigation and Reclamation,
House of Representatives, Washington, D. C.*

MY DEAR CHAIRMAN WHITE: We are enclosing herewith a report, in response to your request of November 20, 1943, for a statement of the views of this Commission respecting H. R. 3570, a bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

Pursuant to Budget Circular No. 344, as amended, this report has been cleared with the Bureau of the Budget.

Sincerely yours,

LELAND OLDS, *Chairman.*

REPORT OF THE FEDERAL POWER COMMISSION ON H. R. 3570, A BILL TO PROVIDE AS AN EMERGENCY WAR PROJECT FOR THE PARTIAL CONSTRUCTION OF THE HUNGRY HORSE DAM ON THE SOUTH FORK OF THE FLATHEAD RIVER IN THE STATE OF MONTANA, AND FOR OTHER PURPOSES

On May 29, 1941, the Chief of Engineers, War Department, caused to be referred to this Commission for examination and comment a report on the Hungry Horse project, and thereupon the Commission caused its staff to review the report. The Army engineers had proposed for ultimate construction a dam about 450 feet high to provide gross storage capacity of 1,888,000 acre-feet, the power installation to be 142,000 kilowatts, and the potential annual energy output about 743,000,000 kilowatt-hours; the cost of the project being estimated at \$31,347,000.

The Commission's staff concluded that the dam might well be built 50 feet higher, so as to provide gross storage of 2,770,000 acre-feet and usable storage of 1,700,000 acre-feet, the power installation to be 172,000 kilowatts. The cost of this more comprehensive project was estimated at about \$40,000,000. The energy potentially available annually would, of course, be substantially increased over that available from the project as first proposed. With these comments, the Commission's staff approved of the project.

Construction of the project to be intermediate stage to provide initial storage of 1,000,000 acre-feet would probably require more than 2 years' time. This would appear to raise considerable question as to its suitability as a war emergency project.

Due to its beneficial effects at existing downstream power plants, additional storage of 1,000,000 acre-feet at the Hungry Horse site, under the proposed

intermediate project, would increase the power supply of the region to about the same extent as would one additional 108,000-kilowatt generating unit in the Grand Coulee plant.

In the spring of 1943 the War Production Board decided to grant priorities for the installation of an additional unit at Grand Coulee, but later reversed that decision, or at least decided to hold the matter in abeyance, because of doubts entertained as to whether the additional power would be required in the region for war-production purposes.

In view of its strategic location at the extreme headwaters of a large tributary of the Columbia River, the Hungry Horse project has merit, since the flow regulation provided by it would be beneficial at all power developments, existing and prospective, on the Flathead, Clark Fork, Pend Oreille, and Columbia Rivers. But the multiple-purpose potentialities of the project have not yet been fully explored with respect to the feasibility of furnishing supplemental water for presently cultivated lands and the irrigation of new lands, in addition to its use for stream regulation and incidental flood control. These determinations should be made as early as possible to permit the completion of plans for construction of the project in the early post-war period.

Considering, therefore, the time required for construction of the project and the probability that power available from other sources will meet the requirements of the war program, it does not appear that the Congress would be justified in authorizing immediate construction of the Hungry Horse Dam as a war emergency project.

LELAND OLDS,

Chairman, Federal Power Commission.

JANUARY 15, 1944.

The CHAIRMAN. The chairman is in receipt of a telegram from Gov. Sam C. Ford, of Montana, which I will ask the clerk to read at this point.

The CLERK (reading) :

JANUARY 31, 1944.

HON. COMPTON WHITE,

*Chairman, Committee on Irrigation and Reclamation,
House of Representatives, Washington, D. C.:*

Regret illness prevents my attending hearing before your committee on measure authorizing construction Hungry Horse project. This project has been approved by Northwest States Development Association, and is part of general plan for development Columbia River Basin. Lack of snow with steadily lowering water cables may result shortage water for power downstream and clearly demonstrates necessity for favorable action. Urgently request favorable congressional action this important measure.

SAM C. FORD, *Governor.*

The CHAIRMAN. We have with us this morning the author of the bill, Congressman Mansfield, of Montana. Will you make a statement to the committee?

STATEMENT OF HON. MIKE MANSFIELD, A REPRESENTATIVE IN CONGRESS OF THE UNITED STATES FROM THE FIRST DISTRICT OF MONTANA

Mr. MANSFIELD. Mr. Chairman and gentlemen of the committee, this bill is a bill introduced by Congressman O'Connor, of this committee, and myself, in the House, and by Senators Wheeler and Murray, in the Senate.

First, I want to thank this committee for its kindness and courtesy in going out to Montana and looking over the situation and ascertaining just what our people thought and what the possibilities of this project were.

It might be well to point out at this time that, as far as the present war is concerned, Montana has received practically nothing in a bene-

ficial way. We have furnished a great many of our young men and women to the armed services. We have sent thousands of our workers to defense industries on the coast and elsewhere. The result has been that we have suffered a decrease in population of 15.3 percent since April 1, 1940, to March 1, 1943. In that respect our record is exceeded only by that of the State of North Dakota, in which the decrease has been 16.4 percent.

You gentlemen will recall the threat which faced us this past summer in the possibility of Flathead Lake being raised eventually to a height of 37 feet above the present high-water level. Because of that, the people of Montana were, and are, united, regardless of any differences they might have had prior to that time, in an effort to keep Flathead Lake as it is. In this fight they were successful, as you well know, because those of you who represented the committee in Montana certainly became cognizant of the feeling of the people of the State as a whole.

We are interested in this particular proposition for a number of reasons: because it has merit; because it is a necessity, if we are going to develop industries in the five Pacific States represented in the group recently formed to look after our mutual interests.

I notice that in the report of the Federal Power Commission Mr. Olds appears to infer that one additional generator would be cheaper than the construction of the Hungry Horse Dam. I do not doubt that statement; but one additional generator is not going to be any good if you do not have the water to keep it working. If you do not get the water, other generators will go out of commission.

At the present time in Montana we have an extremely dry year; it is the driest year since 1895; and in reference to that I want to put into the record at this point a report from the Helena Record, of Helena, Mont., dated the 21st of January 1944, and also a clipping from the Great Falls Tribune, dated the 22d of January 1944, showing how the cherry growers, who represent a young industry in the Flathead area, are viewing the weather conditions. If we do not have some way of supplying water, especially in the upper reaches of the Flathead River area, our food program, as well as Bonneville, Grand Coulee, and the industries dependent on those two projects, are going to suffer tremendously.

(The clippings referred to are as follows:)

[From the Helena (Mont.) Record, January 24, 1944]

MONTANA FACES DROUGHT THREAT—CROPS AND RANGE NEED MOISTURE BADLY

HELENA, January 20 (Associated Press).—Montana "to a very great extent" is gripped by the same "unprecedented" winter drought conditions which prevail over a considerable area of the great plains, Meteorologist A. D. Robb, of the Helena Weather Bureau, reported Thursday.

(In Washington, the Federal Weather Bureau said the winter drought is centered in Nebraska and covers much winter-wheat-production territory. Good rains in the late winter and spring, the Bureau said, would go a long way toward offsetting adverse conditions of the drought.)

"If the drought continues for a very long time," Robb said, "it will have a detrimental effect on winter wheat and ranges, and could lead to shortages during the coming summer and fall of water for irrigation and power development.

"Because cattle are still grazing on open, snow-free ranges, the grass will be quite short by spring. Should the dry weather continue, there might be a serious lack of moisture to revive the ranges for next season.

"The State's fruit crop also could be adversely affected by our present unseasonably warm weather. A few more days like Thursday and Wednesday and buds will be starting, only to die in the inevitable cold spells ahead.

"We must have moisture, too, if the winter-wheat crop is to come up in the spring."

Robb noted that the last 5 months of 1943, August through December, were unseasonably warm and dry, the third warmest fall period since 1895.

The warm dry weather has continued through the first 20 days of January.

The meteorologist quoted a letter received from an old-time resident of Rothiemay, in central Montana, which said: "In 34 years I do not remember so dry a fall and January."

[From the Great Falls (Idaho) Tribune, January 22, 1944]

CHERRY GROWERS NERVOUSLY EYE KALISPELL WEATHER CONDITIONS

KALISPELL, January 21 (special).—Unseasonably warm weather here this month is causing some concern among cherry growers, who, remembering similar conditions a few years ago, fear a sudden cold spell might again result in a loss of some of their trees.

Sap is coming up in the trees now and in Kalispell tree pruning on city boulevards may have to be discontinued in view of possible sudden freezing later, city workmen said.

Temperatures for the first 20 days of January have averaged 5.8° above normal and for the past week 16° above normal. Average mean for the month to date is 26.4° and the highest recording for the month was 48° Thursday, lacking but 8° of tying the January record.

But 1.9 inches of snow fell during the month and the past week there has been none on the ground. Sunshine has been above normal, adding to the spring-like atmosphere.

Mr. MANSFIELD. I would like to call to the committee's attention the fact that on the basis of a dry year this is, in a certain sense, still an emergency project. Furthermore, on the basis of the probability that the war against Japan will last longer and become more accentuated as time goes on, we are going to need more power development in the Northwest.

We have no objection to sharing our water with the other States in that region, but we do insist that Montana be given priority for irrigation, reclamation, and hydroelectric purposes. It is our water. We have lost a lot of our natural wealth to other areas. Our people have not received much benefit; and we feel that if this project goes through we can build a sound and stable economy, develop the resources of the region, and contribute to the prosperity of the Northwest as a whole.

Furthermore, we feel that if something like this authorization is not granted it might not be very long before the Government will come in once again, as it has twice previously, and tamper with Flathead Lake. That is something that we do not want done under any circumstances. In other words, this project, for us, is insurance, not only that the lake will not be tampered with for the present, but for the future as well, and also that resources we possess in abundance be developed and bring a certain degree of contentment and prosperity and security to our people as a whole.

Thank you, gentlemen.

The CHAIRMAN. The Chair recognizes the gentleman from Arizona, Mr. Murdock. Are there any questions?

Mr. MURDOCK. Not at this time, Mr. Chairman.

The CHAIRMAN. Mr. O'Connor?

Mr. O'CONNOR. May I ask my colleague to state, in addition to the splendid statement which he has already given to the committee in

support of the bill, whether or not Dr. Paul J. Raver, Administrator of the Bonneville Power Administration, at the hearings held in Kalispell last summer, made the following answers to the questions propounded by Mr. Rankin (reading):

Mr. RANKIN. You are willing to say for the record so in the event in the years to come when you may not be at the head of the advisory board that you would believe it's a mistake and at no time should this lake be raised in your opinion?

Dr. RAVER. That's my opinion.

Mr. RANKIN. Would it embarrass you to answer this question? Is it your opinion that the Hungry Horse Dam ought to be constructed?

Dr. RAVER. Yes, sir; that's my opinion.

That was Dr. Raver's testimony before our subcommittee at Kalispell, was it not?

Mr. MANSFIELD. That is right.

Mr. O'CONNOR. I note that in the report of the Agricultural Department they speak about damages being done to a large area above this proposed Hungry Horse Dam by reason of the submerging of certain lands. Is it not true that all of these lands are now owned by the Federal Government?

Mr. MANSFIELD. Practically all of them. If any are privately owned I am sure that one of the other witnesses would be able to give us exact information on that.

Mr. O'CONNOR. Is it not also true that this land in the Hungry Horse Reservoir area is principally burned-over land and land that has already been pretty well gone over for the purpose of taking timber from it?

Mr. MANSFIELD. It is burned-over land in the area where the Hungry Horse Dam will, if authorized, be constructed, and economically it does not have much value.

Mr. O'CONNOR. The raising of Flathead Lake was not an irrigation project at all; it was simply for the purpose of controlling the flow of water for generation of firm power through the wheels of Bonneville Dam and Grand Coulee, was it not?

Mr. MANSFIELD. That is right.

Mr. O'CONNOR. In other words, it would not do any good to the people of Montana at all if we raised Flathead Lake, from the standpoint of irrigation, would it?

Mr. MANSFIELD. No. The purpose was to establish firm water power downstream.

Mr. O'CONNOR. To regulate the flow of the water?

Mr. MANSFIELD. Yes; that is right.

Mr. O'CONNOR. As I understand it, if this dam is constructed, the dam of itself, without the generation of electric power, would not be of great beneficial use from the standpoint of irrigation, but coupled with the fact that power would be developed from it and the water could be conducted to a point where it could be put upon the land, it would be of great value to that section of the country in the production of vital crops which may be needed before this war is over?

Mr. MANSFIELD. Absolutely. It would be beneficial from an irrigation, reclamation, and power point of view, and would pay for itself in time.

Mr. O'CONNOR. It would bring into production thousands of acres of lands that are not now producing?

Mr. MANSFIELD. The gentleman is correct.

Mr. O'CONNOR. Is it not also true that if we provide this water we would create a reserve or supplemental water right with reference to the lands already irrigated, assuring those lands of sufficient water in case of just such a year as we are now confronted with?

Mr. MANSFIELD. That is correct.

Mr. O'CONNOR. I think that is all at the present time.

The CHAIRMAN. It is the policy of the Chair to recognize alternately the majority and minority members. I now recognize the gentleman from North Dakota.

Mr. LEMKE. Thank you.

I would like to have you tell me why you think the level of Flathead Lake should not be tampered with?

Mr. MANSFIELD. The reasons are numerous, Mr. Lemke. For one thing, Flathead Lake is a recreation area, the value of which cannot be estimated in dollars and cents. Another reason is the fact that many people from different parts of the State and from different parts of the country have worked and saved with the idea of retiring in that particular vicinity. Another reason is that we have industries along that lake which would be put out of business by a raising of the lake. And we also have the fact, you remember, that in the vicinity of that lake, had the proposal to raise it gone through, somewhere between 45,000 and 50,000 acres of good land, some of the best land in the State of Montana, would have been inundated and made practically worthless. If the lake were raised, it would mean that a lot of this land would be put out of production; practically half of the city of Kalispell would become inundated and made useless, and the remaining half would be on a peninsula; the towns of Somers, Bigfork, and a few other small communities would be done away with completely, and the city of Polson at the lower end of the lake would likewise lose a large part of its town area.

Mr. LEMKE. Will this dam also raise the water in Flathead Lake?

Mr. MANSFIELD. The lake level will remain the same with this dam in operation.

Mr. LEMKE. Is the dam up above the lake?

Mr. MANSFIELD. Yes; in the South Fork of Flathead River.

Mr. LEMKE. That is all.

Mr. O'CONNOR. May I ask one more question?

The CHAIRMAN. Would you mind reserving your question until the other members have been recognized?

Mr. O'CONNOR. That is all right.

The CHAIRMAN. I recognize the gentleman from New Mexico.

Mr. FERNANDEZ. I have no questions, Mr. Chairman.

The CHAIRMAN. The gentleman from Wyoming?

Mr. BARRETT. Mr. Chairman, I might say, in the first place, that it will be necessary for me to leave immediately. I just want to ask the gentleman one question, and I want to preface it by saying that I think he made a very splendid statement, and he has certainly looked after the interests of the people of his own State and of the other States in the Pacific Northwest.

As I see this bill, the purpose of it is, first, to protect the interests of Montana in its own waters and, at the same time, to provide the beneficial use of the water for the other Pacific States; and certainly

Montana is entitled to the general benefit of its own waters. Another purpose of the bill is to provide electrical energy and water for irrigation in your State. Is that about the size of it?

Mr. MANSFIELD. That is right, Mr. Barrett. We feel that we should have the primary benefit of the water, and then when we get through with it the other States can use it, because it has to go downstream anyway.

Mr. BARRETT. Practically everyone in your State is united behind this legislation, are they not?

Mr. MANSFIELD. Everyone.

Mr. BARRETT. Mr. Chairman, as I stated, it is necessary for me to leave, but I see no reason why this committee could not report this legislation out favorably.

The CHAIRMAN. I expect the hearings will continue. Since this meeting has been called it has been decided by the leadership of the minority party to have a caucus, and the caucus convenes at about this time. So for that reason some of the minority members will not be in attendance. I regret that, but I did not know anything about it when arrangements were made for the hearings.

I next recognize the gentleman from Washington.

Mr. HORAN. I will have to leave also, Mr. Chairman. I am intensely interested in this matter. As I understand it, to make full use of the Columbia River and the immense amount of water power that is possible there it will be necessary, for a continuation of firm power throughout the greater part of the year, to have approximately a total of something like 33,000,000 acre-feet of storage area; and, of course, this is the first step in that program. To my mind, you cannot get started on it any too soon.

I am glad to know that hearings are going to be held, because I understand that there are some details that they want to bring before the committee.

The CHAIRMAN. I hope all of the members will be in attendance, because this is the first step in a comprehensive program for the development of the waters of the Columbia River Basin. This bill, as I understand it, fills all the requirements of irrigation, flood control—with emphasis on flood control—and power generation. The project will not only develop initial power, but it will regulate the flow at every plant downstream.

I would like to suggest that Mr. Lenke will find his answer in considerable detail in volume 1 of the hearings. There were comprehensive hearings at Kalispell, where we went into the details of the matter. The raising of the present level of Flathead Lake was gone into in some detail.

Mr. HORAN. I would like further to say that I understand that the five-State agreement is on its way here now by mail.

The CHAIRMAN. It is before the chairman.

Mr. HORAN. Five States are working together with this committee to promote this program.

The CHAIRMAN. Did you have another question, Mr. O'Connor?

Mr. O'CONNOR. Yes; I did, Mr. Chairman.

Is it not true, Mr. Mansfield, that the preliminary work has all been done in connection with this project? In other words, it has already been engineered?

Mr. MANSFIELD. That is my understanding.

Mr. O'CONNOR. Is it not also true that the Army engineers have practically approved the program?

Mr. MANSFIELD. I would say, Mr. O'Connor, that at Kalispell this summer Dr. Raver made the statement to a number of people in that vicinity that he had had a telephone conversation with the Army engineers, and that he, representing the Bonneville Authority, and the engineers, represented by General Hannum, were going to recommend the construction of Hungry Horse Dam.

Mr. O'CONNOR. Is it not also true that within 4 miles of this project runs the Great Northern Railway?

Mr. MANSFIELD. It is very close. I do not remember the exact distance.

Mr. O'CONNOR. Is it also true that there is a good highway running pretty close to where this dam is contemplated to be constructed?

Mr. MANSFIELD. Yes; a fairly good highway.

Mr. O'CONNOR. That is all.

The CHAIRMAN. I recognize the gentleman from Arizona.

Mr. MURDOCK. Congressman Mansfield, you spoke of lands to be irrigated in connection with this dam if it is built. Have you any idea about how much land could be irrigated?

Mr. MANSFIELD. I might ask Mr. Treloar. He has that figure, I believe.

The CHAIRMAN. State your name and your connection, Mr. Treloar.

Mr. TRELOAR. My name is Donald C. Treloar. I am secretary of the Flathead Valley Citizens Committee.

The area to be irrigated is approximately 80,000 acres. I might add that the irrigation possibilities of Hungry Horse Dam have come very quickly and with startling impetus into the picture, inasmuch as a proposed diversion dam for our irrigation project farther down the river has recently appeared not to be feasible, due to engineering reports that are still in the making, but we have it on good authority that the drilling tests for the proposed diversion dam show no good footings.

The CHAIRMAN. The map contained in the report on the Columbia River Basin shows that there are two projects in the immediate vicinity of Hungry Horse. One is the upper Flathead project, M-7, and the other is the Flathead Indian project. Do you know anything about those?

Mr. TRELOAR. Yes, sir. The upper Flathead project is the one to which I referred. The Indian project needs more water constantly because of the fact that they have been trying to bring as much of the land under cultivation as possible. So with the possibility of electric power, with the increased stabilization of water from the Hungry Horse Reservoir, these projects appear to be very fine irrigation possibilities.

The CHAIRMAN. I will state to the gentleman that he will have a chance to testify to this committee in due course. We have with us at this time Senator Wheeler, of Montana, and we should like to hear from him.

STATEMENT OF HON. BURTON K. WHEELER, A SENATOR OF THE
UNITED STATES FROM THE STATE OF MONTANA

Senator WHEELER. I do not know that there is very much that I can add to the very able statement made by Congressman Mansfield. I do want to state, however, that Senator Murray and I attended a meeting with Donald Nelson yesterday, with eight Senators from the Northwest States who are interested in irrigation. We went down to see him for the purpose of ascertaining what the policy was with reference to irrigation generally. Senator Hayden was there; also Senator Hatch of New Mexico and Senator O'Mahoney of Wyoming. We went down to see Mr. Nelson because we had had so many conflicting reports, and we had been pushed around from one Bureau to another and each one seemed to be passing the buck.

In our talk with Mr. Nelson he said that so far as strategic materials were concerned, they could release cement, steel, copper, aluminum, and practically all strategic material needed for the building of dams for irrigation and reclamation. He said that one of the most important things at the present time was food, and that great quantities of food were not only going to be necessary during the war, but also for a couple of years thereafter. He also stated that the food that was going to be necessary was not necessarily meats, but that the Russian people were asking for beans and foods of that sort.

In Montana, in Arizona, and in all the Western States we produce beans and peas.

If Flathead Lake were raised as they contemplated raising it they would take thousands of acres out of production and practically surround the city of Kalispell, which is a city, I should judge, of from 7,000 to 9,000 persons. They were going to take thousands of acres out of production—land which is the most fertile land in the State of Montana; and they were going to use Flathead Lake entirely for power purposes, for the purpose of making aluminum and things of that kind, outside the State of Montana, in Spokane and other places.

Now they have a surplus of copper, aluminum, and some of these other products. This Hungry Horse project would not only increase the potentialities for the development of industries in western Montana, but in other States as well.

I think the first bill to authorize construction of Hungry Horse Dam was introduced by Congressman Monahan something like 10 or 12 years ago; and it has been agitated by the people in that community for the last 20 years, to my personal knowledge. I am very familiar with the situation there because of the fact that I have my summer home located only a short distance from this particular place.

If you build at this power site you have got strategic material such as lumber, gravel, and sand close at hand. You can get the steel, the cement, and all the other strategic material.

The question of manpower is another question that Mr. Nelson said had to be taken into consideration with reference to a project of this kind. We think we have the necessary manpower in this valley, because during a large part of the year you can get people there that would be only too anxious and willing to work. In addition to that, as the production of copper, iron, and aluminum falls off we are going to have an increase in unemployment, we are afraid in Montana—in

the mills, the smelters, and the mines. At least that is the fear. They are already stock-piling copper. To what extent they will continue to stock pile it, I do not know.

One thing that will be done is this, they will take the power that is developed from this power site and run a power line down to the Flathead River and pump water out of the Flathead River. They intended to build a diversion dam at Bad Rock Canyon. If they had built a dam there it probably would have done more damage than any flooding that this dam will do. They will irrigate all the land down below there, something like 80,000 acres or more, and it will help maintain a constant water level in Flathead Lake.

When the Government permitted the Montana Power Co. to build a dam on Flathead Lake they flooded a lot of land and caused a great deal of difficulty for the farmers, and there are a great many lawsuits pending. Some of them, of course, have been settled.

The land in the Flathead River Valley is the most fertile land in the State of Montana. It is productive land ordinarily, but when you put irrigation water on it it will increase its production tremendously, and it will insure that the people of that country will have production every year, and it will not be as it is now, with a drought one year and good production the next year.

I was interested in hearing the report of the Agricultural Department in regard to the lands that will be flooded. I am very familiar with that, because I have gone up the Flathead River fishing a great many times. It is a great fishing stream, and every year I go fishing up the South Fork. On the north side of the river the land has been completely burned over for miles and miles, clear up onto the side of the mountain. So there is not any forest there that will be flooded at all. There is no private land that will amount to anything. There are a few places that might possibly be flooded, but they are lands upon which nobody lives, and nobody could make a living on them if they did live on them, because the land is just stumpage land and poor gravel land.

On the south side of the river there is some timber. I do not know how much of that timber is high-class timber. A good deal of it, I think, is timber that would not be of very much value, because I think it is lodge-pole pine, which is of no value except for use in mines or some use of that kind; and Montana is blessed with all kinds of lodge-pole pine, too much of it.

I tried a lawsuit against the Great Northern Railroad Co. a good many years ago for burning over hundreds of thousands of acres, and one of the experts testified that the land was more valuable without lodge-pole pine on it than it was with it.

When they speak of serious damage, it would mean, of course, that they would have to build some telephone lines and would have to build some new trails and some buildings up there for the Forest Service; but that does not amount to anything.

This project has been studied by the Army Engineers. I think it is agreed by the Interior Department that it is a good project. Everybody who has seen it and made any investigation of it is convinced that it is a good project.

As I stated, Mr. Nelson said that great quantities of food will be needed not only during the war but for a couple of years, at least,

after the war. This project will increase the food supply of the very kinds of food that will be needed more than almost anything else.

There are some people, as you know, in the Middle West, in the Corn Belt, who believe that we should not have any more irrigation projects in the Far West because of the fact that they think our irrigated lands conflict with lands under cultivation in the Middle West. Of course that is fantastic and foolish, because the things that we produce on irrigated lands in the West do not come into competition in the slightest degree with the Corn Belt and other sections of the country.

MR. O'CONNOR. Would the Senator yield at that point for a suggestion?

Senator WHEELER. Yes.

MR. O'CONNOR. Is it not also true that the principal crops produced on irrigated land are forage crops for the purpose of sustaining our livestock?

Senator WHEELER. Yes; and we are also producing beans and peas and other things that they claim are very necessary now.

I cannot see any reason why this bill should not pass at the present time, especially when we have been told they can release steel and cement. Those are two things that are going to be needed when we construct the proposed dam. They have an extra supply, so there is no reason for holding up authorization on account of shortage of strategic materials.

The only other question would be as to whether or not they can secure the manpower. As Congressman Mansfield stated, a great many of our people have left Montana and gone to work in shipbuilding plants and places of that kind, perhaps some of the younger people in order to get out of the draft, and others in order to secure extremely high wages. But many are coming back because of the fact that they are dissatisfied with the living conditions in the other cities, and because of the fact that they have found that notwithstanding the fact that they receive high wages, it takes everything they earn in order to live. So I do not think there is any question about manpower. If they are going to need food after the war as much as Mr. Nelson pointed out to us, then the time to start is when we have got the strategic materials, and that is now, in order to be prepared to produce the necessary food afterward.

I think that is about all I have to say, unless there are some questions.

MR. MURDOCK. Before asking my question, I want to say this, Senator. I was talking with a man from Michigan and I was delighted to hear him say that he was greatly surprised on visiting the irrigated lands of the West to find that they do not compete with the bread basket of the Middle West.

Senator WHEELER. I talked with a very distinguished gentleman from the Corn Belt, and he said, "You people want irrigation out there when we have a surplus of corn and products of that kind."

They simply do not know anything about the West, and they do not know anything about what we produce out there. Many of the people of the East have no conception at all. We raise beans and peas, and we raise alfalfa to feed cattle; and, of course, I should not say this in the presence of Congressman White, but many of the potatoes which are raised in the Flathead Valley are sold as Idaho potatoes. They are

really superior to the Idaho potatoes. We have not advertised ours. The Northern Pacific buys these potatoes from the Flathead Valley and pays Idaho prices.

I compliment Idaho, because that State has been much more far-sighted in advertising.

Mr. O'CONNOR. Idaho is better at publicity.

Senator WHEELER. Yes.

Mr. MURDOCK. When was this conference with Donald Nelson held?

Senator WHEELER. Yesterday morning.

Mr. MURDOCK. That is right up to the minute. With reference to the subject of manpower, do you find that in that part of the country there are many contractors who have equipment and crews now idle who are ready to go to work on on such projects?

Senator WHEELER. There is no question about that. I am glad you called my attention to that. In the city of Great Falls there are two of the largest contractors in the United States.

Mr. O'CONNOR. One of them is about the largest.

Senator WHEELER. Yes; they are one of the largest contractors in the United States. They are employed by the Government in building all over the country. I talked with them this summer. Every time a new project comes up, contractors from all over the West are anxious to get contracts because of the fact that the Government projects are being completed, and these men want to keep their crews together, their expert men, and they are only too anxious to have their machinery used. They have got it right there in Great Falls for that purpose.

The CHAIRMAN. The Chair recognizes the gentleman from Montana.

Mr. O'CONNOR. I just want to ask one question. Is it not true that in addition to the very informative statement that the Senator has already given the committee, we are now faced with the probability of an unprecedented dry year, and that, if we do not create a reserve or a supplementary supply of water, farmers may not be able to irrigate lands that are already under cultivation?

Senator WHEELER. There is not very much land under irrigation in the Flathead Valley. There is a comparatively small amount of land irrigated there. It has been to a large extent dry farming, and in most years better crops are grown in that valley than in other parts of the State. They do have some dry years when they do not get anything at all, or comparatively little.

Mr. O'CONNOR. Of course, if we have an extremely dry year it might be reflected in all of the Northwestern States, and if we control the flow of the water we may have water for the other Northwestern States as well as our own.

Senator WHEELER. The reports that we are all receiving from the Northwestern States are that there has been no snow out there to amount to anything at all. There is very little snow in the mountains. There is not only a lack of water for crops, but there is going to be a lack of water for the purpose of developing power to carry on industries that are already established and going at the present time.

The engineers looked around and investigated the North Fork of the Flathead. There are a North Fork, South Fork, and Middle Fork.

The North Fork comes out of the mountains in the Glacier Park region. The Middle Fork comes down along the Great Northern.

These streams flow into the Flathead River and through Flathead Lake and make up one of the big branches of the Columbia River.

There was talk of constructing a dam on the North Fork of the Flathead River and flooding a large part of Glacier Park itself, which of course the people out there would never stand for because it would destroy too much of the beauty of the park, and if you wanted to get into the park at certain places you would have to go by boat.

Hungry Horse is the most feasible project that you can find anywhere out there. The damage done is infinitesimal, because on one side there is not anything but burned-over land, bare land. That is on the north side. On the south side there is some timberland. If the timber is not cut pretty soon it will probably be burned over by a fire in a particularly dry year.

Mr. O'CONNOR. That is all I care to ask the Senator.

The CHAIRMAN. I recognize the gentleman from North Dakota.

Mr. LEMKE. Senator, since you have brought in the question of competition, do you agree with me that for one section of the country to tell another section what it can raise is dangerous to the future of our Republic?

Senator WHEELER. I think it is not only dangerous, but, as far as I am concerned, I am not going to let some other section of the country tell the people of Montana what they should do with their water or what they should raise or anything else, as long as I can prevent it.

Mr. LEMKE. Just one more question. With reference to the Hungry Horse Dam and reservoir, the land involved is very poor agricultural land, is it not?

Senator WHEELER. That land probably is impossible for agriculture. It is a very gravelly land.

Mr. LEMKE. I would like to correct you a little on that potato proposition, because I talked to the O. D. T., and they told me that North Dakota had the best potatoes in the country.

Senator WHEELER. The O. D. T. never ate any of the potatoes raised in the Flathead Valley. They are so good that Idaho advertises them as Idaho potatoes.

The CHAIRMAN. Thank you, Senator Wheeler.

We have Senator Murray with us, and we would like to hear from him.

STATEMENT OF HON. JAMES E. MURRAY, A SENATOR OF THE UNITED STATES FROM THE STATE OF MONTANA

Senator MURRAY. I will try to be very brief because the matter has been so fully covered that hardly anything need be added. I will try to avoid any unnecessary repetition.

I think that the statements that have already been made show not only the feasibility of this project but the desirability of starting it at this time. The project is one which has been studied by the people of the section of the State where it is located for many years. At the commencement of the depression, when the Government instituted the public works program, representatives of this section came before the Federal public works authorities with the idea of having the project constructed as a part of that program. There is no question

but what it would have been constructed then if the engineering had been done and it had been ready for development, because there was money and manpower waiting to carry out just such a project as this.

It is not only desirable from the standpoint of irrigation, flood control, and providing a steady flow downstream but it is extremely desirable from the standpoint of furnishing a balanced economy to our State. Montana is the third largest State in the Union, but it has a population of only 550,000 people. The census, during the last three periods in which the census has been taken, shows that the population of our State has been gradually dwindling. You cannot maintain a State like ours upon the basis entirely of a raw material economy. We have no industrial development. It is desirable that we should have some in order to hold our population and provide for further growth.

It would have been a great mistake to have dammed the Flathead Lake and brought that water down below into the Columbia Valley solely to benefit the Grand Coulee and Bonneville power plants, because the Columbia Valley is already being pretty highly developed. It seems to me that some development should be undertaken beneficial to our State. For some time we have found there is a shortage of power in Montana at different periods. There is no question but that we should have power developed in addition to the other desirable features of this project, such as irrigation and flood control. That has all been covered quite fully here today.

The area that will be flooded by this project, as has been shown by Senator Wheeler and other speakers here, is of a quality lacking in economic value or importance. When we were out there last year a number of us flew over this territory on an inspection. The plane circled completely around the basin that would be included, and it appeared very clearly to be land of no value. I think you were with us, Mr. Chairman.

The CHAIRMAN. Yes.

Senator MURRAY. It showed that the character of this land was such that it was not desirable that it should be retained for agricultural or other purposes. So it appears that there will be no serious damage done from flooding this land.

It seems to me that the most desirable thing is that we should allow the State of Montana to have some power development, so that it may undertake to develop its extensive resources. We have great deposits of minerals and other materials in our State which require cheaper power to bring into development. This project would accomplish that purpose.

It is also desirable from the standpoint that it will enable considerable rich agricultural land to be developed there, which will furnish homes for new people, will help to return some of the population that have left us and help to stabilize our whole economy in Montana.

The different Government departments that have investigated this project at different times, including the Army engineers and the Federal Power Commission, have recognized that the project is practicable, feasible, and desirable. At the commencement of the war it was ready to be approved for immediate construction. The only thing that held it up was the shortage of materials, the scarcity of materials to go into the project, making it undesirable that its construction be undertaken

just at that time. Today, as Senator Wheeler has pointed out, the demand for materials that will go into this dam is being eased off and there will be no difficulty in securing materials of the kind that are necessary for a project of this kind.

Besides, as the witnesses have shown you, we have large firms of contractors out there that are looking for jobs of this kind, and it would be important that they should be permitted to keep their organizations intact—by a job of this kind and not allow them to break up, to disintegrate, to go to other parts of the country.

I am very anxious to see the committee approve this project, because it is something that the people of Montana have been looking forward to for a great many years.

Mr. O'CONNOR. Would the Senator yield for a question?

Senator MURRAY. Yes.

Mr. O'CONNOR. Is it not true that during an unprecedentedly dry year a few years ago the Montana Power Co. had to import power from the State of Washington to carry on various industries of Montana?

Senator MURRAY. Yes; that is absolutely true.

Mr. O'CONNOR. This would augment their power?

Senator MURRAY. Yes. It is also true that because of the fact that we did not have power in the State during the war period we were unable to get any projects of a character we could have used. We have opened up vast deposits of new minerals out there. We have developed chrome deposits over at your end of the State, and it would have been desirable to have a chrome plant over there, but we did not have the necessary power, and therefore such a project could not be considered.

Mr. O'CONNOR. Right under the shadow of this proposed project is there not a lot of alumina clay that could be used?

Senator MURRAY. Yes; and huge deposits of phosphate likewise are ready for development.

But the important thing is that we should not allow one section of the country to become depopulated, its economy to disintegrate, while other sections of the country are being over expanded with industry. We do not want to do the same thing in the West that was done in the East—concentrating industries of the country in specific localities. It seems to me that we have the same type of territory in western Montana that they have in the Columbia Valley area and that we should have some industries there as well as down below.

Mr. MURDOCK. Senator, will you yield for another question?

Senator MURRAY. Yes.

Mr. MURDOCK. You are convinced that we are coming into the age of lighter metals and that the Mountain States have an abundance of these strategic lighter metals if we had the power to develop them?

Senator MURRAY. Oh yes; there is no question about that. We have a great many of the most important critical and strategic metals which could be developed out there. The matter has been studied and explored and there is no question but what we could bring about a considerable development in Montana which would, as I say, expand our population and balance our economy. Montana has since its beginning been run entirely on a raw material economy. That is all we have, and as our raw materials gradually disappear, the wealth of Montana disappears. If we do not balance it by developing some cheap power we will be in an unfortunate situation. These water resources should be

developed within Montana. We should be given some consideration in having power development for our own use and not make our State a mere reservoir for furnishing power and water to other sections of the Northwest.

It seems to me, from the reports that the Army engineers have made on this matter, the Federal Power Commission and even the Bonneville Authority admit that this is exactly the same kind of project that the Northwest States Development Association has recommended for the development of power in our State and the development of agricultural land that will be made available. It does seem to me that there should not be any hesitation in the approval of this project.

Mr. MURDOCK. I would like to ask the Senator two or three other questions.

The CHAIRMAN. If it is agreeable to the Senator, you may proceed. Senator MURRAY. Surely.

Mr. MURDOCK. I know of the Senator's great interest in mineral production, and that is why I asked the question a moment ago. But now, going to another matter, which involves irrigation, in which we Westerners are all interested. If this dam is built and the irrigation of 80,000 acres, or whatever it may be, takes place, will that interfere in any way with any irrigation project below, on the entire system?

Senator MURRAY. Below Flathead?

Mr. MURDOCK. Below this dam.

Senator MURRAY. No; it will benefit them, because the construction of this dam will permit the water to continue down the river at times when it is most needed.

Mr. O'CONNOR. It will create supplementary power?

Senator MURRAY. Yes. Some witness said here today that they could install an additional generator down below if they could get this water from Montana. Why not build the power dam in Montana and let them continue to have the water down in the Columbia Valley after it has been used for the development of power in our State?

Mr. MURDOCK. In other words, a dam higher up would firm the power that is produced below?

Senator MURRAY. Yes.

Mr. MURDOCK. And not only that, but there would be enough return flow so that there would be more water for irrigation?

Senator MURRAY. Yes.

Mr. O'CONNOR. It would insure a reserve supply?

Senator MURRAY. Yes. The project will not only be beneficial to our State, but will be beneficial to the people down below.

Mr. LEMKE. I may be treading on dangerous ground right here; I am not well enough acquainted with the map, and several States are involved. Does that take into consideration any State agreement?

Senator MURRAY. I understand that five States out there which are interested in this Northwest development have all agreed that this project should be constructed.

Mr. O'CONNOR. That is one of the first steps.

Senator MURRAY. Yes. The Hungry Horse project is already on the program for post-war development, recognizing that it is feasible and desirable as a post-war project. But we think that plans should be immediately started to develop it because of the situation out there. It will furnish immediate employment for men. Soldiers are begin-

ning to return; and, as Senator Wheeler pointed out, it will form the basis of increased food production in this country, which is very important, not only during the continuation of the war, but in the immediate post-war period.

Mr. O'CONNOR. This committee, Senator, has a subcommittee to look into the matter of promoting reclamation with a view of benefiting the returning soldiers. I am glad to hear the Senator say that.

Senator MURRAY. Yes. It is anticipated that our State can make homes for many thousands of returned soldiers if we are given an opportunity by the development of this project and the development of other projects which we have under consideration.

The CHAIRMAN. The Chair recognizes the gentleman from North Dakota for a question.

Mr. LEMKE. Would you agree with me that North Dakota and Montana will have sufficient room for the returning soldiers, provided we have the water to irrigate the land?

Senator MURRAY. Yes. It all depends upon being able to furnish water.

Mr. LEMKE. And the most economical use to which water can be put in the Middle West is storing it for irrigation and at periods when it will prevent floods?

Senator MURRAY. That is right.

Mr. LEMKE. Navigation is secondary, anyway, is it not?

Senator MURRAY. Yes. Projects like Hungry Horse do not interfere with or conflict with agricultural production in any other section of the country, because the crops we will produce are of a character that will be absolutely needed and will be more needed when the war ends. Russia and other countries will be in the market for a tremendous supply of the very things that we will produce.

Mr. LEMKE. Unless this drought is broken we will need additional feed for cattle in the Western States?

Senator MURRAY. That is right. Our meat supplies are going down, and this will help us furnish protein foods that will take the place of meat. It will be important as a source for the shipment of foods abroad, also, in the post-war period.

Mr. LEMKE. And in the long run it will save the taxpayers a great deal of money in not having again to set up a W. P. A. or any relief projects?

Senator MURRAY. Yes. If they give Montana an opportunity to develop its natural resources, give it an opportunity to generate cheap power, like other States have, we will not need any W. P. A. in our State. Montana's population will grow and industry thrive. It will reverse the present situation which has been continuing now for the last three censuses. It has been shown in each census that we have had a drop in the population of our State. It seems to me that from the standpoint of the national economy they should not allow Montana to go that way. It is an injury to the country as a whole.

The CHAIRMAN. Montana has a tremendous supply of raw material resources in the form of timber, has it not?

Senator MURRAY. Yes.

The CHAIRMAN. Both merchantable timber for lumber and a vast amount of timber suitable for the manufacture of pulp and other things?

Senator MURRAY. Yes.

The CHAIRMAN. This power that would be developed at Hungry Horse would be in the very middle of all that great supply of timber?

Senator MURRAY. Yes; that is true.

The CHAIRMAN. Most of that is in Government ownership?

Senator MURRAY. Yes. With the development of power there is no question but that we would develop some pulp plants.

The CHAIRMAN. Paper mills could be built near by?

Senator MURRAY. Yes.

The CHAIRMAN. As a matter of fact, three great transcontinental railroads cross the United States, and in handling the bulk of the traffic across the country they pass very near to this project, do they not?

Senator MURRAY. Yes.

The CHAIRMAN. The Great Northern passes quite near, the Northern Pacific just to the south, and the Milwaukee coming near it at Missoula?

Senator MURRAY. Yes. They have a long stretch through Montana. With the improvement of the economic conditions of the State it would be a great benefit to the railroads. It would be a benefit to the whole Nation. When we were short of manganese in this country at the commencement of the war we immediately went to work in Montana and began to develop our manganese out there.

The CHAIRMAN. You have a large deposit near Philipsburg?

Senator MURRAY. Yes; a plant at Philipsburg, one at Butte, and one over at Anaconda.

The CHAIRMAN. This project would be very close to one of the great mining sections of the whole country, at Butte?

Senator MURRAY. Yes.

The CHAIRMAN. And the smelting center at Great Falls?

Senator MURRAY. Yes. There is no doubt about what it would accomplish in increasing the population of the State and developing industries.

The CHAIRMAN. The Milwaukee Railroad is already electrified and drawing on the hydroelectric power generated in western Montana to draw its trains through the Northwest?

Senator MURRAY. Yes.

The CHAIRMAN. The Great Northern is burning oil, and oil is becoming scarce. It may be that this power would be needed by the Great Northern to energize its road.

Senator MURRAY. Yes.

The CHAIRMAN. And the Northern Pacific. This project is very strategically located, is it not?

Senator MURRAY. Yes; it is.

It does seem to me that there should be no hesitation about it, because, as was pointed out a little while ago, our population is leaving us while other sections of the country are being overdeveloped and overcrowded, creating the same conditions down in the Columbia Valley for example that were created in Pittsburgh and other sections of the East. It seems to me that we should allow industry to be decentralized. If our State had a little additional power there is no question but what we could greatly increase our population. When they were building the Fort Peck Dam there was a serious shortage

of power and they wanted to shut the construction down in order to conserve power for a while. There is an absolute need for additional power.

Mr. O'CONNOR. That was a dry year?

Senator MURRAY. Yes. As soon as the dam was completed the Montana Power Co. was immediately in the market to get power from the Fort Peck Dam. It should be used for irrigation purposes. It should go to the farmers in that section to allow them to develop their land over there.

Undoubtedly there is a great demand for this project from the standpoint of power, for irrigation, and for flood control.

The CHAIRMAN. In addition to the initial power which will be developed at Hungry Horse, which I understand is about 100,000 horsepower, or maybe more, it would increase?

Senator MURRAY. I think it is 187,000. The total power in Montana is about 250,000, and this will produce 187,000.

The CHAIRMAN. I am glad to be corrected, because I was only speaking from memory. Aside from the initial development it would also augment the development by regulating the flow of the stream down into these other tremendous installations?

Senator MURRAY. Yes. It would increase the reserve.

The CHAIRMAN. It may also increase the facilities, because it would create storage in the pool back of the Grand Coulee and augment the power there that would be used for pumping water out of Grand Coulee to put water on the lands in Columbia Basin?

Senator MURRAY. That is true.

The CHAIRMAN. It would be beneficial all along the line.

Mr. O'CONNOR. Following the suggestion made by the chairman, Secretary Ickes sometime ago pointed out that he anticipated a shortage of fuel in 1944 and 1945. In other words, if we develop this power it would be of great assistance in carrying us over in the event of a shortage of fuel in 1944 and 1945?

Senator MURRAY. That is correct.

Mr. O'CONNOR. Is not this true, that electricity is carried over lines at least a distance of 300 miles without much loss?

Senator MURRAY. That is true.

Mr. O'CONNOR. And it could be carried 300 miles either way from this proposed site?

Senator MURRAY. Yes; and any additional power developed in our State also would be of great value to adjoining States where they might need power.

Mr. O'CONNOR. I want to compliment the Senator on the very able and informative statement which he has given the committee. You have given us a bird's-eye view of the matter and have pointed out the necessity for this project.

Senator MURRAY. I thank you, Mr. Congressman. I am sure that you are just as much interested in this project as I am, although you live in the eastern end of the State.

Mr. O'CONNOR. Every tree in Montana is mine; every drop of water in Montana is mine; every acre of land in Montana is mine.

Senator MURRAY. That is right. The only difficulty is that you cannot cash in on it.

The CHAIRMAN. The committee thanks you, Senator Murray, for your splendid presentation.

I will say to the gentleman from Montana, Mr. Mansfield, the author of the bill, that it will be the purpose of the Chair to recognize you to ask any questions that you may desire to ask. You can act as a member of this committee, in other words.

Mr. MANSFIELD. May I interject right here and say that I want to compliment Senator Murray on his very fine, full, and comprehensive statement. I think it should be brought to the attention of the committee members that Senator Murray has been interested in the development of Hungry Horse for at least 12 years to my personal knowledge, and I think that he as well as Congressman O'Connor, Senator Wheeler, and myself, is interested in a sound and permanent economy, in the development of our State and the Northwest.

The CHAIRMAN. The Senator has been of great assistance to the committee because of his splendid and able presentation.

Senator MURRAY. I do not want to let the occasion pass without saying that the statements made by my colleagues are superior to mine, in my judgment. I think they have gone into the subject very thoroughly. I have merely tried to give you a picture of the situation without undue repetition. Congressman Mansfield, in his opening statement, said practically everything that could have been said in support of the project, it seemed to me. I do not think I have added very much to it, except to put some flourishes on the tail end of the argument.

Mr. MURDOCK. We have had four mighty fine presentations. The last Senator did not say anything about the quality of Montana potatoes, but that is the only omission that I can recall.

Mr. O'CONNOR. The quality has been established.

The CHAIRMAN. It is customary in conducting hearings to ask the member that introduced a bill to hear from the departments. We have with us a gentleman who has to leave very shortly to catch a train. We will now hear from Mr. William A. Dittmer.

STATEMENT OF WILLIAM A. DITTMER, POWER MANAGER, BONNEVILLE POWER ADMINISTRATION, PORTLAND, OREG.

Mr. DITTMER. Mr. Chairman and gentlemen of the committee, I want to say, first, that Dr. Raver was anxious personally to appear at this hearing, and he was in town last week, but, unfortunately, he had to leave. He had been here for some time, but he could not wait to be heard. He appeared before the subcommittee at hearings in the Northwest on House Resolution 262, which has already been referred to, and I think that much of the testimony that he gave on that occasion would be applicable here.

Several of his statements have already been put into the record by Congressman O'Connor. I think he made a statement on page 163 of volume 1 that is also particularly applicable.

In these circumstances, and in order to conserve the time of the committee, I would like to make only a brief statement at this time, with permission, if the committee please, to submit a written statement if it is found to be desirable.

The CHAIRMAN. Without objection a written statement may be placed in the record.

Mr. DITTMER. I merely want to reiterate Dr. Raver's statement as to our position with regard to the Hungry Horse project. I think I can state without qualification that the Bonneville Power Administration favors the construction of the Hungry Horse project just as soon as materials can be made available.

Our position is based fundamentally on the thought that the Columbia River development should be a balanced development and that all parts of the Columbia Basin and the river should share in the development more or less as the development proceeds.

The Administration is strongly of the view that the advantages of hydroelectric power development should accrue to all parts of the drainage basin that contribute to the water resources or provide energy. Accordingly it favors power development not only of the main stem, the benefits of which tend to go largely to the more highly developed industrial and metropolitan areas downstream, but to the upstream areas as well.

Columbia River may be increased either by the installation of additional dams and power plants on the river or by the development of upstream water storage or by a combination of these means. The combined method of securing an integrated development of river installations and of upstream projects for storage and other economic purposes is desirable. A storage development upstream permits the repeated use of water for multiple purposes. It provides for needed water and land development in certain areas. It distributes work and the long-term benefits of drainage basin development. It provides advantages not otherwise available to upstream and interior States and areas. It is in accord with the policy of wide physical and economic development, looking toward the most efficient use of all water resources from an engineering viewpoint. That is also true of the timing of these various developments. It does not follow that the sole determinant is a pure dollars and cents determination with reference to one project as against another, because we feel that there are much more important principles and benefits involved; and whether one project should come first or another should come first depends upon something more than the immediate dollars and cents involved.

The Hungry Horse project, as we all know, is on the South Fork of the Flathead River which, in turn, flows into the Clark Fork; and Clark Fork is the principal tributary of the Columbia which contributes to downstream power.

In closing I merely want to add the thought, as has already been stated here, that the very presence of large blocks of low-cost hydroelectric power is itself a very important factor in attracting industries to the area. Therefore we have constantly emphasized the need of building in advance of waiting until specific industries or specific uses for the power are necessarily right there. But the presence of power to a large extent itself creates such needs and brings industry into the area; and for this reason we feel that the development of power in the upper stream reaches of the river will contribute very materially, in addition to the irrigation and other features, to the development of that area.

Mr. O'CONNOR. In other words, the mere fact that it is there produces a potential demand for power in the future?

Mr. DITTMER. That is very definitely true.

I think that concludes what I have to say, Mr. Chairman.

Mr. MURDOCK. You are an engineer, I presume?

Mr. DITTMER. Not technically, in the sense of having gone to engineering school, but I have had a great deal to do with the management of engineers and supervision over them.

Mr. MURDOCK. I was glad to hear your statement that the location of a dam is not dependent entirely upon the dollars and cents value. That sounds more like a social engineer than an electrical engineer, to me, and I was glad to hear that. I agree with the sentiment.

Mr. O'CONNOR. I want to say to the witness that we of Montana certainly appreciate the cooperation of the Bonneville Power Administration. We are very appreciative of the fact that you are interested in this project. The building of it would not only be of benefit to the people of Montana but also to the people of the five Northwestern States involved?

Mr. DITTMER. Yes; that is true.

Mr. O'CONNOR. I think that is all I care to ask.

The CHAIRMAN. Mr. Lemke, do you have a question?

Mr. LEMKE. Do you know how many feet of water there is in the ground table?

Mr. DITTMER. Not at the present time.

Mr. LEMKE. I understand it is about 18 feet on the west as compared with 52 feet on the eastern side.

Mr. DITTMER. I assume your figures are correct. I do not have it in mind.

Mr. LEMKE. After 2 or 3 years of abundant rain it has only come back a few inches. Do you consider it important to keep the water more or less distributed in the localities where it falls, for building up those ground waters again?

Mr. DITTMER. I certainly do. I think the first claim on water should properly go to the area in which the water falls. I do not think that is at all inconsistent with other material benefits as it flows downstream. I think it can be worked out very definitely and is being worked out very definitely as a well-integrated program.

Mr. O'CONNOR. Including flood control?

Mr. DITTMER. Including flood control; yes, sir.

Mr. LEMKE. It has been suggested that there would be very little need of industry if the central part of the United States became a desert. I think water conservation is as important as anything else in this picture.

Mr. O'CONNOR. Is it not true that the water table throughout the Dakotas and Montana has been gradually lowering for years?

Mr. DITTMER. So I am told.

Mr. O'CONNOR. And such a measure as this would go to put a stop to that progressive lowering and conserve the water for the beneficial uses that the people may put it to?

Mr. DITTMER. This water would go toward the west coast rather than in the other direction; but it is the same idea.

Mr. O'CONNOR. It is just a part of a system that has got to be developed to conserve this water and keep it from going into the oceans. That is ultimately where it flows, either that or the Gulf of Mexico?

Mr. DITTMER. Yes.

Mr. MURDOCK. The witness is primarily interested in power, I take it?

Mr. DITTMER. That is correct.

Mr. MURDOCK. The building of any dam on the upper tributaries would firm the power below, and in that respect you would be interested?

Mr. DITTMER. That is true.

The CHAIRMAN. I would like to ask a few questions of the witness. However, I understand you have to catch a train?

Mr. DITTMER. No; I am not pressed very hard. I have an hour.

The CHAIRMAN. You are the manager of the Bonneville Power Administration?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. And the Bonneville Power Administration, as I understand, was established to market the power from Grand Coulee, which is operated by the Bureau of Reclamation, and Bonneville, which is operated by the Army?

Mr. DITTMER. Yes.

The CHAIRMAN. Do you deal with the problem of supplying that market and the distribution of power?

Mr. DITTMER. That is correct; the transmission of power.

The CHAIRMAN. Do you have anything to do with the fixing of rates?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. And in supplying the market?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. You handle all that?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. To facilitate the operation of the war industries in the Northwest a pool of power has been created whereby the water of the Bonneville, Grand Coulee, and all the privately owned projects has been turned into a pool from which the power is available for distribution; is that correct?

Mr. DITTMER. That is correct.

The CHAIRMAN. And there is a rather complicated rate structure in connection with disposing of or supplying the private and public needs?

Mr. DITTMER. Not so much a complicated rate structure as a complicated business of trying to determine just what power went in each direction. It goes into the pool and it is quite a complicated matter to account for it accurately and to determine just what each one should pay.

The CHAIRMAN. You do pay some attention to the power rates in making your distribution of the power?

Mr. DITTMER. Yes. We furnish power on contracts.

The CHAIRMAN. You are selling power that is delivered to defense plants and Government-operated plants, and the ultimate consumer may pay a very moderate rate, and then you deliver power to privately owned utilities that may charge a much higher rate?

Mr. DITTMER. The prices do not vary a great deal.

The CHAIRMAN. Not as far as the Bonneville Power Administration is concerned, but I mean, to the ultimate consumer.

Mr. DITTMER. Yes. We have no direct control, during the war period especially, over the rates at which the private utilities will sell the power that they purchase from us; that is correct.

The CHAIRMAN. You have a rather stable rate structure?

Mr. DITTMER. That is correct.

The CHAIRMAN. It is equalized. But when the power reaches the ultimate consumer through privately owned companies he may pay three times as much as was paid for the power delivered directly to some Government-owned operation?

Mr. DITTMER. That is correct.

The CHAIRMAN. What is the situation at this time with reference to the supply and demand for power that you are distributing?

Mr. DITTMER. For about the last month or 6 weeks we have been turning out practically every single kilowatt-hour that the plants are capable of turning out, and delivering it into the Northwest, and at times we have not had quite enough. We have had to burn some fairly substantial quantities of oil at times because the amount of hydro power was not adequate to meet the entire need.

The CHAIRMAN. Then it has been found necessary to supplement the hydroelectric power with steam-generated power?

Mr. DITTMER. Yes.

The CHAIRMAN. And you use oil for fuel in doing that?

Mr. DITTMER. Partly oil and partly hog fuel.

The CHAIRMAN. By "hog fuel" you mean ground-up sawmill refuse?

Mr. DITTMER. Yes.

The CHAIRMAN. You are creating a drain on the oil supplies that are sorely needed in other lines of industry?

Mr. DITTMER. Yes. It would be very desirable, from all reports that I get, not to have to burn any oil in the Northwest but to supply the electrical needs by additional hydro which does not use up natural resources.

The CHAIRMAN. There is a very acute shortage of oil for both heating and energy at the present time, is there not?

Mr. DITTMER. So the Petroleum Administrator for War advises.

The CHAIRMAN. And in face of that shortage you have had to supplement your power supply by consuming a very substantial quantity of oil to generate power by steam?

Mr. DITTMER. Yes. We have not actually used the oil, you understand, Congressman, but the oil-burning plants are owned by private utilities, and to the extent that they cannot get enough hydro from us to let the oil-burning plant stand idle, they have to burn oil.

The CHAIRMAN. They have to burn oil to create the electrical energy that is needed in the war industries?

Mr. DITTMER. Yes.

The CHAIRMAN. And we at the present time are short of hydroelectric power. There is a shortage at the present time, is there not?

Mr. DITTMER. That is right.

The CHAIRMAN. Is there a potential market for a great deal more if it could be created?

Mr. DITTMER. That is right.

The CHAIRMAN. In a comprehensive, constructive program to fully utilize the waters of the Columbia River and its tributaries, this Hungry Horse project would create storage and an initial power genera-

tion of some 180,000 horsepower and would, in addition to that, also increase the production by regulating the stream flow of Grand Coulee and Bonneville. In other words, you are making a lot of power during a flood season which would be in a large measure firm power, and you could depend upon that once this project is created, and the production of Bonneville and Grand Coulee is increased, in making your contracts for the sale of power?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. It would be a fact, also, that the privately owned companies, besides Bonneville and Grand Coulee, the one at Rock Island owned by Stone-Webster, and any other that might be constructed downstream, would also benefit?

Mr. DITTMER. Yes.

The CHAIRMAN. And where this river flows through the canyons the plants that would be constructed on the Canadian side would also benefit from the construction of this Hungry Horse project?

Mr. DITTMER. That is true.

The CHAIRMAN. And if you are using all the power from Coulee now and a very large demand comes to pump water out onto irrigated land, some 1,125,000 acres, this Hungry Horse project would directly benefit that program by regulating the flow of the river and increasing the production at Grand Coulee?

Mr. DITTMER. To some extent; but the storage is more useful for creating power during the nonirrigating season and firming up power at that time, because there is ample water during the irrigating season to pump for irrigation at that point.

The CHAIRMAN. You recognize the fact that after the middle of July the river is at low ebb and you are not through pumping at that time so as to be able to maintain your production of beet sugar and alfalfa pastures, and there is a constant demand for water all through the growing season, and to that extent, after the peak has passed and the river has fallen to its lower level, the regulation of the flow in the Columbia would be equivalent to what is being done in the Colorado through the construction of Boulder Dam, and it would be beneficial?

Mr. DITTMER. Yes, sir.

The CHAIRMAN. And it would increase the revenue that you are obtaining from Grand Coulee and Bonneville without taking into account the revenue that the Government would derive from the sale of power generated at the project itself?

Mr. DITTMER. That is correct.

The CHAIRMAN. We thank you for your splendid statement.

We have present a representative of the Department of the Interior, the Bureau of Reclamation.

**STATEMENT OF WILLIAM E. WARNE, ASSISTANT COMMISSIONER OF
THE BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR,
WASHINGTON, D. C.**

Mr. WARNE. My name is William E. Warne. I am Assistant Commissioner of the Bureau of Reclamation, Department of Interior. In order to conserve the time of the committee, it probably would be better if I presented my statement. I am perfectly willing to be interrupted if any of you think it would help to ask questions.

The CHAIRMAN. We think it would facilitate consideration of the matter before the committee if the witness could complete his statement without interruption; but it is the opinion of the Chair that if some special thing needs to be explained questions would be in order.

Mr. WARNE. I am appearing today in response to an invitation extended to Commissioner Harry W. Bashore by the chairman of your committee and Representative Mansfield, of Montana, to discuss H. R. 3570. This bill, as you know, would authorize the Secretary of the Interior to undertake, as an emergency war project, the construction of the initial stage of the Hungry Horse Dam on the South Fork of the Flathead River in Flathead County, Mont. The Flathead River is a tributary of the Clark Fork of the Columbia River.

I am not in a position to advise the committee with respect to the views of the Bureau of Reclamation, the Department of the Interior, or the Bureau of the Budget in connection with H. R. 3570. Those views are now in process of formulation.

I am glad, however, to give the committee such factual information as the Bureau of Reclamation possesses in regard to the Hungry Horse project.

The Hungry Horse project, sometimes known as the Kalispell project, is one of those which the Bureau of Reclamation has placed on its tentative list of post-war projects. That is not to say that it should not be built now for the purpose of increasing power output in downstream hydroelectric plants for war and other purposes.

The Bureau of Reclamation is interested in the Hungry Horse Dam as a feature of a larger, more comprehensive plan now in preparation for the development by irrigation of the lands in the so-called Kalispell area; for power production for use in Montana; and for flood control and related benefits.

The low dam contemplated in the bill now before you would regulate releases of stored water that would materially increase the firm power capacity at the Grand Coulee Dam and other Columbia River plants. The Bonneville Power Administration which has charge of the distribution of power from Grand Coulee and Bonneville Dams will doubtless give you full details on the power needs for war in the Pacific Northwest.

As a matter of fact, Mr. Dittmer already has pretty well outlined the necessity for this dam in connection with the down-stream situation.

The Hungry Horse Dam would fit in well with an over-all long-range program for the development of the Columbia River Basin. A dam at the Hungry Horse site would provide storage for irrigation of some 80,000 to 100,000 acres of land in the Kalispell area, to which I have referred and which lies just north of Flathead Lake. Therefore, if a dam is to be authorized the committee might wish to consider including authorization for construction of the required irrigation works and systems as well.

Under normal conditions approximately 7 months would be required to purchase the right-of-way, complete field investigations, prepare plans and specifications, let a contract for and begin the construction of a dam such as the Hungry Horse. With the project authorized, ample funds provided, and a high priority given on manpower and materials, this period probably could be shortened. Simi-

larly, under emergency conditions, the construction period to bring the dam to a point where storage would be effective for increasing the firm power supply for war purposes at downstream plants would be materially reduced from the pre-war estimates of 3 to 4 years.

Our engineers believe that a suitable dam at the site would be a concrete structure. They estimate that it would cost about \$20,000,000.

The proposed Hungry Horse Dam and Reservoir was, I believe, first studied a score of years ago by the United States Geological Survey, which, like the Bureau of Reclamation, is an Interior Department agency. These studies included geological exploration of the dam site and reservoir area, foundation exploration by core drilling of the dam site, and field surveys related to stream flow, and the capacities and areas of the reservoir.

The Bureau of Reclamation initiated field surveys in the vicinity of Kalispell, Mont., in the fall of 1940. Water supply studies showed that the natural stream flow of the Flathead River below the junction of the South Fork is adequate for irrigation of the lands in the Kalispell area without storage, and our preliminary plans contemplated a diversion dam in Bad Rock Canyon. Bad Rock Canyon is immediately below the confluence of the South Fork and the main stem of the Flathead River just east of the town of Columbia Falls. This plan would not have required a storage dam. The first examination, by geophysical methods, of the diversion site in Bad Rock Canyon indicated that suitable foundation would be found at a depth of about 75 feet below stream bed. Recent core drilling at the best site, topographically, has shown that satisfactory foundation material will not be found within a depth of 300 feet. This leads to the conclusion that a diversion dam raising water to any material height is not practicable at the most favorable site in Bad Rock Canyon. Drilling was undertaken at another and less favorable site, but there is small hope now that it will prove satisfactory.

The tentative opinion of the Bureau engineers at this time, therefore, is that a dam on the main stem of the Flathead River in Bad Rock Canyon is physically infeasible and we, therefore, necessarily must revise our original plan of development for the Kalispell area. One solution for the problem that the failure to find a usable site in Bad Rock Canyon has introduced would-be diversion of water from the South Fork a few miles below the Hungry Horse Dam site. This now seems the best. The South Fork's natural flows will not provide an adequate water supply without storage and regulation throughout the irrigation season for the irrigation of the acreage of arable but semi-arid land that is available in the Kalispell tract. A storage reservoir, therefore, would be needed to make the flow of the South Fork adequate. A reservoir at the Hungry Horse site would serve this purpose and solve the problem of how to get the water that will be required.

That makes the Hungry Horse Dam a feature of an irrigation project out there.

The Hungry Horse Reservoir, in addition, could provide flood protection in the Kalispell Valley, where flood control is greatly needed. It would also make it possible to develop power at the site for use in Montana, and, in addition, it would provide, as has been noted, stream-flow regulation that would be reflected in the in-

creased production of power downstream at all existing plants, at least potentially, and at all power sites that may be developed later on the lower rivers.

The preliminary studies of the Bureau of Reclamation show that the initial development of the Hungry Horse project should include a concrete dam to provide approximately 1,000,000 acre-feet of live or usable storage. This dam would permit the installation of 80,000 kilowatts of power capacity at the site. The ultimate development contemplates a dam to store 1,500,000 acre-feet and permit a total power installation at the site of 142,000 kilowatts.

The CHAIRMAN. May I ask you how long a time will be consumed in completing your statement? We have now reached 12 o'clock, and it will be necessary to adjourn shortly. We can continue a few minutes if you can complete your statement within a short time.

Mr. WARNE. I have about half finished it, Mr. Chairman.

The CHAIRMAN. Proceed.

Mr. WARNE. The power plants downstream that would benefit are the Polson (Kerr) plant of the Montana Power Co.; the Thompson Falls plant, also of the Montana Power Co.; the Grand Coulee plant of the Bureau of Reclamation; the Rock Island plant of the Puget Sound Power Co., and the Bonneville plant of the Corps of Engineers. When the increase in the firm power capacities of the power plants likely to be installed downstream on the Columbia is taken into account, the total firm power capacity directly attributable to the Hungry Horse project would be a very material amount.

Storage at the Hungry Horse Dam would permit the installation of another generating unit at the Polson (Kerr) Dam. When constructing the power plant at Jolson (Kerr), provision was made by the Montana Power Co. for the future installation of an additional 56,000 kilowatt unit. There are places for additional generators at the Grand Coulee and the Rock Island plants, as well. The Thompson Falls and Bonneville plants do not have provision for installation of additional generators. The benefits to these two plants would be full and immediate for that reason.

The Hungry Horse Dam, as has been stated, is important as a unit in the multiple-purpose development of the Columbia River Basin. For some years past it has been urged by the Bonneville Advisory Board, the Corps of Engineers, and more recently, by the newly organized Northwest States Development Association. It has also been considered by the Bureau of Reclamation. The Hungry Horse development is one of the major features of the over-all plan as it bears on the Clark Fork.

Further, the Hungry Horse Dam is a part of the basic program recommended by the State of Montana. It has support throughout the State. Any basic program for water and land development would be seriously weakened by omission of a project of its key character in the drainage-basin scheme and in the State and regional economy.

The Hungry Horse Reservoir area is virtually uninhabited. Much of it has been burned over, and the second growth is small.

Mr. O'CONNOR. May I ask a question right there?

The CHAIRMAN. Yes.

Mr. O'CONNOR. You say that much of it has been burned over and the second growth is small. Have you in mind the percentage that is burned over?

Mr. WARNE. I think it is half.

Mr. O'CONNOR. At least that?

Mr. WARNE. Yes. There would be relatively little of value lost in submerging the area. Lands that have been developed or that are potentially irrigable in the Flathead watershed lie below the reservoir site.

In addition to providing supplemental storage to increase the firm output of power at downstream plants, the Hungry Horse Dam would make possible, as I indicated earlier, a power plant at the site to serve a potentially important market in Montana. This would encourage the development of mineral resources in this region, including silver, lead, copper, and aluminum clays. There are stands of pulp timber sufficient, so our preliminary information indicates, to provide continual operation, with reforestation, of a 200-ton paper mill. There would also be a substantial demand for power in connection with the irrigation of lands which would be served from storage in the Hungry Horse Reservoir. Water will have to be lifted from gravity canals by pumps to water more than a third of the lands that are in need of irrigation.

Topographic surveys of approximately 107,000 acres in the Flathead Valley immediately north of Flathead Lake have been completed by the Bureau of Reclamation, and it is roughly estimated that from 80,000 to 100,000 acres are irrigable. Most of the land could be served by gravity from the diversion to be made just below Hungry Horse Dam. About 35,000 acres of the total, however, would be served by pumping with 50-foot lifts from the gravity canals. The Hungry Horse power plant would produce, over and above the needs of irrigation pumping, about 370,000,000 kilowatt-hours of firm power and 120,000,000 kilowatt-hours of secondary energy annually. That means that these amounts would be available for commercial use after the irrigation requirements had been served.

The CHAIRMAN. Where would that be generated?

Mr. WARNE. At the Hungry Horse plant; 120,000,000 kilowatt-hours of secondary energy over and above irrigation needs.

The CHAIRMAN. Millions or thousands?

Mr. WARNE. We are talking about kilowatt-hours rather than kilowatts, so they are millions, Mr. Chairman.

Most of the potentially irrigable area is now dry farmed, and of this approximately 30 percent is devoted to the production of wheat and other small grains. The rainfall, about $7\frac{1}{2}$ inches during the crop-growing season, is inadequate to produce the pasture and forage that is needed for the livestock industry of the area. Such hay crops as are produced are usually limited to one cutting per year. Some potatoes and peas are grown under dry-farming methods on these lands, but the yields are very low.

With irrigation, the production of potatoes, dairy products, and peas will be substantially increased in the areas now dry farmed. The present livestock industry would be materially benefited and stabilized as well through the increase in assured forage crops.

Areas presently irrigated below Flathead Lake produce per acre on the average approximately 180 bushels of potatoes, 25 bushels of dried field peas, 35 bushels of wheat (spring and winter), 50 bushels of bar-

ley, 85 bushels of oats, 25 bushels of rye, and 3 to 3.5 tons of alfalfa hay. These figures forecast what can be done with irrigation on the Kalispell area. Similar or higher production may be expected in the area north of the lake when irrigation water is available from the Hungry Horse Reservoir. Preliminary information indicates that with irrigation the lands in the Kalispell area will bring about the creation of food and new wealth to the extent of about \$2,000,000, annually over and above the present production of these lands.

Control at Hungry Horse Dam of high water flows would make it possible profitably and economically to bring about 8,000 or 8,500 acres of marginal lands along the main stream of the Flathead River into sustained production. These lands, because of flooding and threat of flooding, are now used only to produce wild hay. Flood control also would accrue benefits to additional lands and areas in the valley.

The CHAIRMAN. Do you confine your examination of flood control in your statement to the Flathead Valley?

Mr. WARNE. Yes, sir.

The CHAIRMAN. If the witness will extend his examinations a little further into the low-lying lands along Clark Fork and around Lake Pend Oreille, he will find about 10 times as much land that would be benefited with regard to flood control down in the Clark Fork Valley and around Lake Pend Oreille and all the tributaries that flow into that lake and the streams that flow clear to the Washington line. I most earnestly suggest that the Department of Interior, through its Bureau of Reclamation, make a very complete and comprehensive study with reference to controlling the waters upstream in the Flathead River and the possibility of increasing the utility of the land along Clark Fork and around Pend Oreille Lake and down the Pend Oreille River.

Mr. WARNE. You are quite right, Mr. Chairman. This consideration goes only to the lands immediately involved.

The CHAIRMAN. The lands all along the river and on down in Clark Fork Valley around Lake Pend Oreille and the Flathead River Valley were all inundated in 1894 and have been inundated periodically since, and they would all reap the benefit of the project which is involved here.

Mr. WARNE. These acres that I have been talking about, because of their frequent flooding, are now used only to produce wild hay.

The CHAIRMAN. I direct your attention, as chairman of this committee, to that situation.

Mr. O'CONNOR. I would like to have an estimate, if you have it.

Mr. WARNE. I will get you an estimate on that. The fact is that we recognize that additional lands downstream would be benefited.

Mr. O'CONNOR. The submarginal land you refer to is land that does not grow any grain crops?

Mr. WARNE. It is marginal because it is subject to flood.

Mr. O'CONNOR. And drought, too, I suppose?

Mr. WARNE. Yes.

If the Hungry Horse Dam is to be authorized at this time, the authorization might well include the development of the lands in the Kalispell area by irrigation. These lands could be served by a canal system tentatively estimated to cost \$12,000,000. This irrigation development, of course, should await the end of the war.

The Bureau of Reclamation has not completed its engineering report on the Kalispell or Hungry Horse project, and therefore the information I have given is but tentative at this time. Present indications are that a multiple-purpose development, including Hungry Horse Dam and power plant and transmission lines, and the irrigation system, would cost about \$40,000,000. The benefits would exceed the cost materially and have been roughly calculated as follows:

Irrigation benefits, \$2,000,000 annually.

Local power benefits, \$650,000 annually.

Downstream power benefits, \$300,000 annually.

Flood control, \$100,000 annually.

That, sir, completes my statement.

The CHAIRMAN. There will be no opportunity to examine the witness at this time.

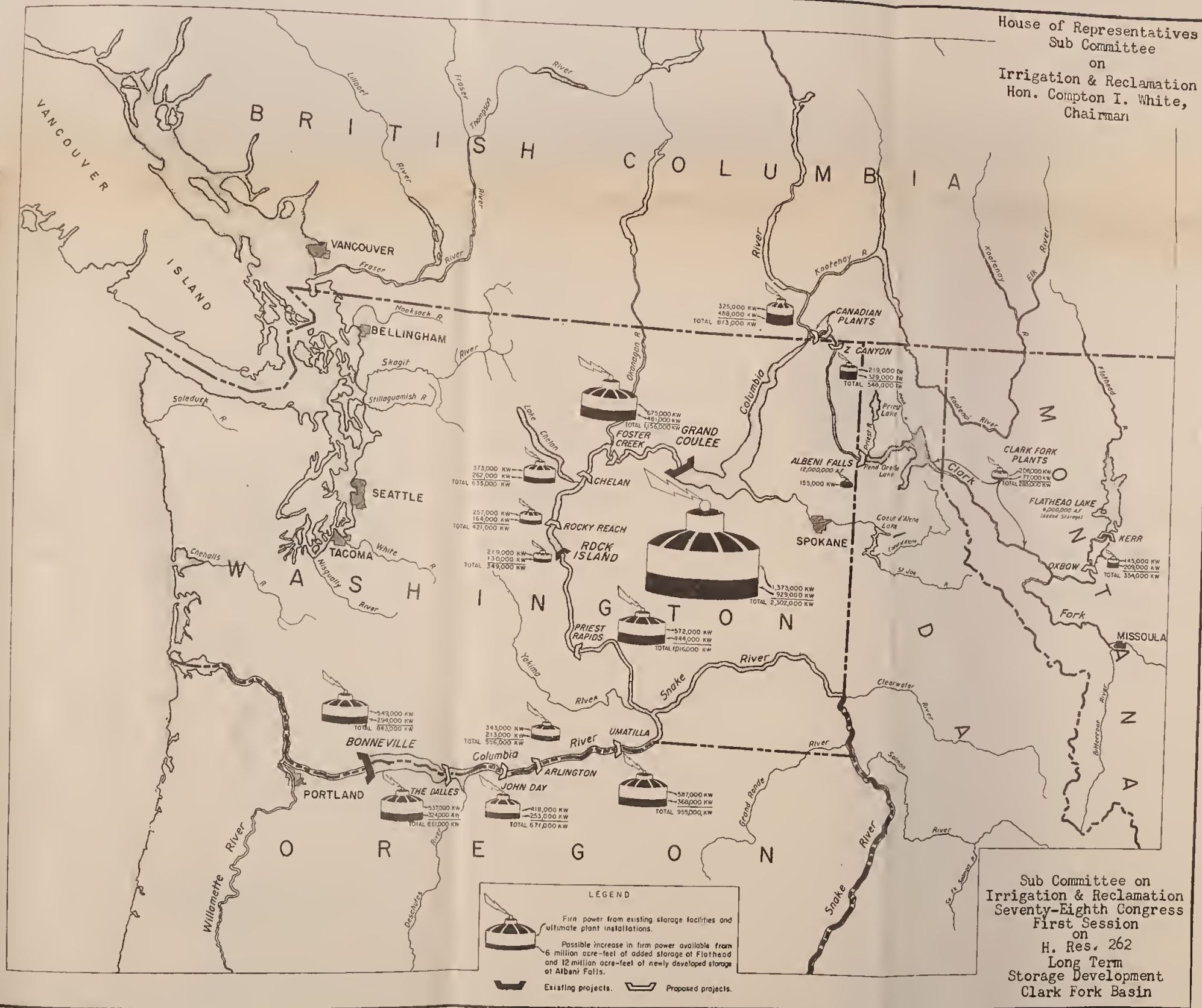
Mr. O'CONNOR. We have some witnesses here from Montana, and no doubt they are down here at a heavy expense at these high-priced hotels. May I suggest continuing these hearings as quickly as possible?

The CHAIRMAN. It is the Chair's idea to have 1 day's interval and then resume the hearings on Thursday and complete them, if that is satisfactory.

The Chair announces the appointment of a subcommittee to consider the provisions of H. R. 3179. On that committee I will appoint Mr. Murdock, Mr. O'Connor, Mr. Lemke, Mr. Fernandez, and Mr. Horan.

The committee will adjourn until 10 o'clock next Thursday morning. (Whereupon, at 12:20 p. m., the committee adjourned until Thursday, February 3, 1944, at 10 a. m.)

House of Representatives
Sub Committee
on
Irrigation & Reclamation
Hon. Compton I. White,
Chairman



Sub Committee on
Irrigation & Reclamation
Seventy-Eighth Congress
First Session
on
H. Res. 262
Long Term
Storage Development
Clark Fork Basin



Sub Committee on Irrigation & Reclamation
Hon. Compton I. White
Chairman

Sub Committee on Irrigation & Reclamation
Seventy-Eighth Congress
First Session
on H. Res. 262
Long Term Storage Development
Clark Fork Basin

LEGEND

Firm power from existing storage facilities and ultimate plant installations

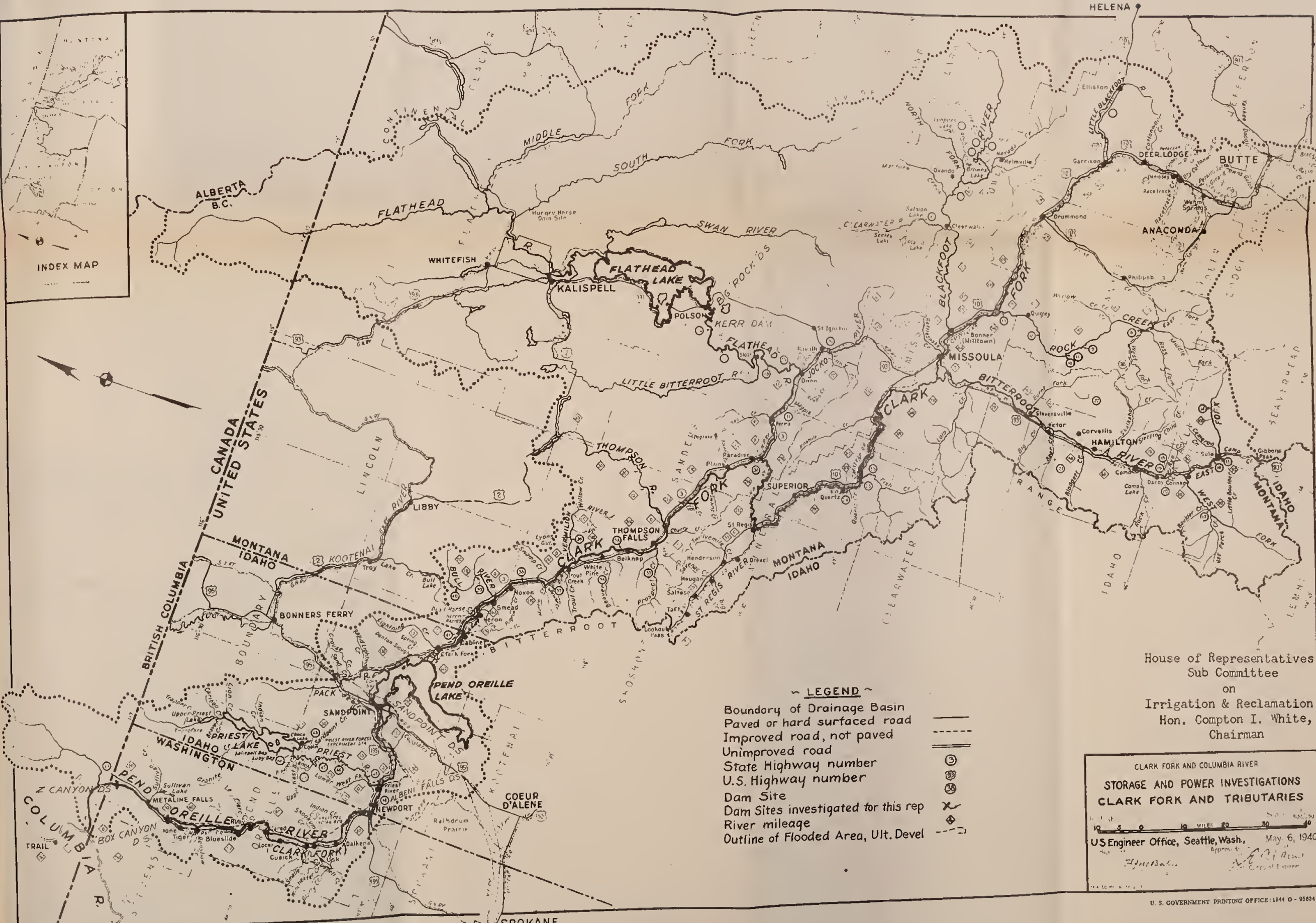
Possible increase in firm power available from 6 million acre-feet of added storage at Flathead and 12 million acre-feet of newly developed storage at Albani Falls.

Existing projects

Proposed projects.

U. S. GOVERNMENT PRINTING OFFICE: 1944 O - 95834





INDEX MAP

House of Representatives
Sub Committee
on
Irrigation & Reclamation
Hon. Compton I. White,
Chairman

- ~ LEGEND ~
- Boundary of Drainage Basin
 - Paved or hard surfaced road
 - Improved road, not paved
 - Unimproved road
 - State Highway number
 - U.S. Highway number
 - Dam Site
 - Dam Sites investigated for this rep
 - River mileage
 - Outline of Flooded Area, Ult. Devel

CLARK FORK AND COLUMBIA RIVER
STORAGE AND POWER INVESTIGATIONS
CLARK FORK AND TRIBUTARIES
U.S. Engineer Office, Seattle, Wash., May 6, 1940
Approved: [Signature]
[Signature]
Chief of Engineer



HUNGRY HORSE DAM

THURSDAY, FEBRUARY 3, 1944

HOUSE OF REPRESENTATIVES,
COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C.

The committee met at 10 a. m., pursuant to adjournment, Hon. Compton I. White (chairman) presiding.

The CHAIRMAN. The committee will come to order. The meeting is called for further consideration of H. R. 3570, a bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the south fork of the Flathead River in the State of Montana, and for other purposes.

Mr. Warne was presenting the position of the Department of the Interior to the committee the other day when we adjourned, and he may now proceed.

STATEMENT OF WILLIAM E. WARNE, ASSISTANT TO THE COMMISSIONER OF THE BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.—Resumed

Mr. WARNE. Mr. Chairman and members of the committee, I have had made a map containing some of the important names and places that we have been using in this discussion. It shows Hungry Horse Reservoir in relation to the Kalispell area that is proposed for irrigation, in relation to the Polson-Kerr power plant, the Thompson Falls power plant, the Grand Coulee power plant, the Rock Island power plant, and the Bonneville power plant, which would be aided by the construction of the Hungry Horse Reservoir through the regulation of downstream flow, and it shows the Hungry Horse in relation to the proposed Canyon Ferry Dam and power plant in Montana, a proposal that is coming up in the Bureau of Reclamation, and in relation to the Fort Peck power plant in Montana, the Shoshone and Seminoe power plants in Wyoming, and the Black Canyon, Arrow-rock, Anderson Ranch, Minidoka, and American Falls power plants in Idaho.

I think you will find this map of interest.

The CHAIRMAN. We are dealing now with the tributaries of the Columbia River, and you commence, I believe, on the Flathead River and you have followed the course of the stream and described and enumerated the plants, Thompson Falls, and so forth?

Mr. WARNE. Yes. Let us start at Hungry Horse, which is on the South Fork of the Flathead River. Then the next area I indicated on the map was the Kalispell area, the area to be irrigated. That is immediately above Flathead Lake on the Flathead River.

The CHAIRMAN. I noticed that you omitted Cabinet Gorge. You know that there has been some \$30,000 expended by the Bureau of Reclamation on that, and it is one of the few potential sites that have been examined and is ready for construction.

Mr. WARNE. I did not attempt to indicate all the sites, Mr. Chairman.

The CHAIRMAN. That is a part of the program of the Bureau of Reclamation?

Mr. WARNE. Yes, sir.

The CHAIRMAN. It seems to me that your enumeration has two great omissions, one of which is very important. In the first place, you did not go into the flood-control feature below the Flathead area.

Mr. WARNE. I have an additional statement on that this morning.

The CHAIRMAN. And coming down around Lake Pend Oreille and down to the Clark Fork Valley, the area around Lake Pend Oreille, and then the area along the Pend Oreille River, you have omitted the Rock Island power site at Knoxville, Mont.; you have omitted Cabinet Gorge, which has been reported on on several occasions, on which \$30,000 has been expended in testing the rock structure. It is all ready; everything has been done that needs to be done on a field examination for the construction of the dam. Then, going on down farther, you have overlooked, I am sure, the potential benefits of flood control to the important area clear across the State of Montana from Albany Falls on one side and Cabinet Falls on the other.

Mr. WARNE. I made no effort to indicate on this map, or in my presentation, for that matter, the detail of what we have referred to here as the over-all or comprehensive plan for that area. However, the discussion pretty generally has centered around the benefits that would accrue to the existing downstream plants; and those are the ones I have shown on this map. I thought it would be useful to the committee.

The CHAIRMAN. You appreciate the fact that a subcommittee of this committee has recently completed a field survey or investigation of the water resources and the utilization of the water resources in the area along these tributaries?

Mr. WARNE. Yes, sir.

The CHAIRMAN. And there are some very fine potential power sites farther downstream; and Hungry Horse would regulate the flow and increase the potential power production from all of these existing plants and all future plants?

Mr. WARNE. That is right; all the potential plants.

You asked me, Mr. Chairman, for a fuller discussion of the flood-control aspects of Hungry Horse Dam. I mentioned on my last appearance here the 8,000 to 8,500 acres of land along the main stem of the Flathead River which would be benefited.

Mr. O'CONNOR. As marginal lands?

Mr. WARNE. Marginal because of the threats of floods to them. Marginal did not refer to their quality otherwise.

The CHAIRMAN. They would be elevated to the class of productive lands by the construction of this project?

Mr. WARNE. Yes, sir. I also mentioned the fact that flood control there would bring benefits, in addition, to land and areas in the valley farther downstream.

The following is a summarization of the data extracted from volume 2 of House Document No. 103, Seventy-third Congress, first session. It is a War Department report on the Columbia River and minor tributaries.

The maximum elevation of record of Flathead Lake occurred in 1894, the biggest rise in 1928, and the third rise in 1916, with 279,000 acre-feet of storage available in Hungry Horse Reservoir for flood control at the time of the 1894 flood, the elevation on Flathead Lake would have been reduced by 3.28 feet. That is, to approximately elevation 2,896.7; and on Pend Oreille by 2.32 feet. That is to approximately elevation 2,073.8.

Studies of the 1928 flood show that if 135,000 acre-feet of storage had been available in the Hungry Horse Reservoir, the maximum elevation of Flathead Lake during the 1928 flood would have been reduced by 3 feet from elevation 289 to elevation 2,893, and that the corresponding reduction in elevations on Pend Oreille would have been 2.90 feet from elevation 2,068.7 to elevation 2,065.8.

The 1928 flood studies did not take into account any possible general storage between Flathead and Pend Oreille Lakes which would have further reduced the computed flood height at Pend Oreille.

The CHAIRMAN. I wonder if I might make an observation at this point in the record. I am afraid that neither the Army engineers nor the Bureau of Reclamation took into consideration the special features in the topographic situation as to Pend Oreille Lake. It has been developed and demonstrated over the years in several floods that there is a very serious bottleneck at the lower end of Lake Pend Oreille, and after the river has reached its crest and starts to fall, the lake continues to rise and goes on up as much as 2 feet. If the flood were controlled at Hungry Horse that condition would not be so emphasized. In fact, it is my opinion from my observations that instead of being 2 or 3 feet lower it might be 4 feet lower if that flood were controlled upstream. So that anything that reduces the floods in the upper drainage area would be that much more beneficial to the Idaho territory, or the area around Lake Pend Oreille.

Mr. WARNE. With the greater amount of flood control storage capacity available than those cited above the flood crest heights on both Flathead and Pend Oreille Lakes would be reduced further. The areas which would benefit from flood control out of Hungry Horse Reservoir are the delta of the Flathead River and the lands marginal thereto and the lands marginal to Pend Oreille Lake and Sand Point.

What we have said here about flood control must be assumed to be incomplete. We have not completed our engineering studies, sir.

The CHAIRMAN. May I suggest to the Department of the Interior and the Bureau of Reclamation that in making these studies particular attention be paid to the so-called bottleneck at Priest Rapids near the town of Priest River, which is about 5 miles above Albany Falls.

I make my apologies to the committee at this time. I have a commitment before another committee, and I will ask Mr. Murdock to preside.

(The chairman withdrew from the hearing room and Mr. Murdock assumed the chair.)

Mr. MURDOCK (presiding). Have you completed your statement?

Mr. WARNE. I have completed my statement; yes, sir.

Mr. MURDOCK. Are there any questions?

Mr. O'CONNOR. I have a few questions, Mr. Chairman.

I am not quite clear on the number of acres of land that would be brought under cultivation in the event of the construction of this dam; that is, the additional acreage in Montana.

Mr. WARNE. The additional acreage is found in this so-called Kalispell area, which is estimated to be 80,000 to 100,000 acres out of a total of 107,000. That is being studied. Some of that land is now under dry farming, but all of it would be very materially benefited.

Mr. O'CONNOR. Dry farming out there, of course, is like dry farming every place else. It is all right in a wet year, but in a dry year it is not.

Mr. WARNE. As I said earlier, the average rainfall is about $7\frac{1}{2}$ inches during the growing season; and that is insufficient. On the average, the dry farmer has a pretty tough row to hoe.

Mr. HORAN. It would be 68,000 acres?

Mr. WARNE. Eighty thousand to one hundred thousand acres.

Mr. HORAN. Not in the Kalispell area?

Mr. WARNE. Yes, sir.

Mr. O'CONNOR. Have you made any estimate of the number of acres irrigated in what may be called the Kalispell Valley above Polson, that ordinarily would be irrigated from waters from the Flathead River or any tributary of it?

Mr. WARNE. I have not that figure with me, sir, but I believe I have it available. I could put it into the record for you.

Mr. O'CONNOR. I wish you would.

Mr. WARNE. The land below Flathead Lake and above Polson to which you referred is mainly in the Mission Valley division of the Flathead irrigation project of the Indian Service. That includes about 110,000 acres, most of it supplied from streams from the Mission Range.

Mr. O'CONNOR. You stated, I believe, in the beginning of your testimony that your explorations there were not completed and that you were not in position to advise the committee as to just what the conclusions of the Department will be as to recommending the passage of the bill. Is that correct?

Mr. WARNE. That is correct, sir.

Mr. O'CONNOR. Is it not true that as far as you have gone it looks to you like the whole proposition is feasible?

Mr. WARNE. Yes, sir.

Mr. O'CONNOR. Not only feasible, but desirable?

Mr. WARNE. Yes, sir.

Mr. O'CONNOR. And necessary if even forage crops are going to be produced in that section of the country?

Mr. WARNE. Produced on anything like a substantial and satisfactory basis; yes, sir.

Mr. O'CONNOR. A sustaining basis with reference to the livestock industry? Of course, that section of Montana is the same as all of Montana—primarily a livestock country, so far as the farmers are concerned?

Mr. WARNE. That is right.

Mr. O'CONNOR. And this proposal is necessary for the maintenance of the livestock industry in that section of the State?

MR. WARNE. That is our opinion, sir.

MR. O'CONNOR. And the principal crops produced under irrigation of that land would be sustaining crops to the livestock industry?

MR. WARNE. That would be our expectation. There would be some other field crops, but the backbone of the area would be the livestock industry.

MR. O'CONNOR. In other words, they are not what you would call competitive crops, such as the production in Iowa, Illinois, and eastern Nebraska?

MR. WARNE. Quite the contrary. The Corn Belt areas get a lot of their feeder stock from areas such as the Flathead area.

MR. O'CONNOR. I have produced cattle myself, and I know that is a fact.

MR. WARNE. The livestock industry is an integrated industry. The cattle are raised out there and shipped to Iowa, for instance, to be fed.

MR. O'CONNOR. If we do not have these forage crops we cannot produce feeders.

MR. MILLER. Last Tuesday there were some letters read that sort of indicated that there had not been approval by the Reclamation Bureau or the War Food Administration, and perhaps the Budget Bureau. Is that true as far as Hungry Horse Dam is concerned?

MR. O'CONNOR. As I understand it, Mr. Warne stated that the Department had not completed its investigations yet, but as far as they have gone, it looks like a feasible and desirable proposal.

MR. MILLER. Another statement that I want to make for the record, Mr. Chairman, if I may, is this: The topsoil of America is wearing out, and unless something is done to produce more food, either through irrigation projects or the conserving of our soil, we may well face periods of hunger in this country as they do in the Orient now, because their soil is worn out. After this war many men will be looking for places to locate. In the beginning of every war the thing that is most important is the Army, then transportation, and then food. The longer the war goes on and the more depleted countries become, the more it reverses itself, and food becomes most important, then transportation, and then the Army.

The actual experience that I have had in trying to get some projects approved through the various channels of red tape that exist now, is very discouraging. We recently had one instance—the Mirage Flats project. As you men know, we have to go through the Reclamation Bureau, the War Food Administration, the Facilities Division of the War Production Board, the War Manpower Commission as to available labor, and if there is any power involved, we have to go through the Federal Power Commission. My experience has been that there is no coordination of their activities. In fact, I am strongly of the feeling that there are some of these agencies that are actually hindering the development and the production of food.

I think this committee and men who are interested in producing food and conserving soil ought to make some concerted effort to see that these five or six agencies get together and go down one road.

The experience that I had in the little Mirage Flats matter was, first, that there was no labor available. Then it was found that they had some German prisoners out in the back yard of the project. The War Manpower Commission said they would not allow them to be

used. They are eating food. Why not let them help produce it? Then we were told that there was no steel. Yet there was enough steel on the ground to finish it. Then they said, "There is no lumber to go ahead with."

I find some jealousies and some bickering between the War Food Administration and the Reclamation Bureau. Whether this committee can do anything about it or not, I do not know. If we are going to get projects like this approved, there should be some understanding of the importance of food.

Mr. O'CONNOR. That is right.

Mr. MILLER. And someone to knock some heads together, if necessary, in these five or six agencies, to get them to know that food is important and that these projects should be developed.

I wanted to get that off my chest, because I have just recently gone through 6 months of trying to get agencies together in seeing the problem as a whole, whether it is prisoners, lumber, critical materials, or what not. No one seems to agree on what they should do. It is discouraging.

Mr. O'CONNOR. There is a great deal in what the gentleman says.

Mr. MURDOCK. I am glad to have that statement go into the record, because the problem of the gentleman from Nebraska has been about the same as that of most of the rest of us. Of course, in executive session we will probably have more to say along that same line.

Mr. MILLER. If you want me to keep it out of the record, I will do it.

Mr. MURDOCK. No; we want it in the record, because it is just what all of us are thinking.

Mr. MILLER. It has been growling inside of me because there have been so many stone walls that I have run up against. This project looks like it has some possibilities. We want to conserve our soil. Our soil is wearing out, and irrigation helps to preserve it. We had better begin to look ahead a hundred years.

Mr. MURDOCK. We certainly should, indeed.

We have present a representative of the Bureau of Reclamation, and he needs to know our thought on this as well as the gentleman from the West.

Mr. WARNE. We are trying to push these things as hard as we can, and we feel sometimes that we are confronted with stone walls; but with your help and that of others we managed to get Mirage Flats through. Certainly the Bureau of Reclamation and the Department of the Interior are convinced on the subject of the necessity of food.

Mr. MILLER. What conflicts do you have between the departments as to whether there is going to be water for irrigation, for the production of food, or water for power?

Mr. WARNE. I do not believe there is any such conflict, sir.

Mr. MILLER. Not on the surface?

Mr. WARNE. Well, I do not think you will find it there. As far as we are concerned, irrigation takes the primary use of the water. I think we may get into conflicts on some other uses, as, for example, navigation, but not on power.

Mr. O'CONNOR. Is not this true, that under the common law, regardless of statutes, any substance such as water, where it is susceptible of multiple uses, must first be put to the most necessary use for the sustaining of life, such as the production of crops?

Mr. MILLER. That is correct.

Mr. O'CONNOR. That is fundamental?

Mr. MILLER. Yes.

Mr. O'CONNOR. You can write a law contrary to the common law by putting power primary to irrigation and reclamation; but in the absence of that, you first use water for the necessary sustaining of life.

Mr. MILLER. Yes. But right at this point, these five or six agencies seem to have a finger in the production of the necessities of life and they ought to begin to see the problems as one problem.

Mr. O'CONNOR. If they do not, they do not know what they are doing.

Mr. MURDOCK. Are there any further questions?

Mr. HORAN. I would like to clear up in my mind the net gain of this dam. We are considering it on its merits as a storage dam. As I understand it, it also is capable of providing 100,000 kilowatt-hours of electricity and will bring into production 6,000 to 8,000 additional acres of land?

Mr. WARNE. No, sir. You have confused. I believe, a figure that I gave you that would be the gain from flood control. That is a figure of land improvement that would be gained from flood control with the land improvement that would be obtained through irrigation. The fact is that in the Kalispell area there is 80,000 to 100,000 acres.

Mr. HORAN. It is 111,000, I think, out of 138,000 available?

Mr. WARNE. Which could be irrigated from the Hungry Horse Dam. We are not certain of the exact figure, because the investigation is not completed.

Mr. HORAN. That much can be irrigated?

Mr. WARNE. Yes. The 8,000 acres that I mentioned later was simply those bottom lands that are marginal now because of floods.

Mr. HORAN. They will be reclaimed because of flood control?

Mr. WARNE. Yes; while the other lands will be reclaimed because of irrigation.

Mr. HORAN. That is an additional advantage of this project, as I see it.

Mr. WARNE. Yes, sir.

Mr. HORAN. What I was getting at, Mr. O'Connor, was to show the multiple advantages there are in the net.

Mr. O'CONNOR. I am glad that the gentleman has brought that out.

Mr. HORAN. It is not only a storage dam, but it is a benefit in several ways. It will destroy no mineral values, and, having been burned over two or three times, the forest is in bad shape, and it is also above the frost line. I see very few objections to this dam in my own mind.

Mr. MILLER. Is the dam for control of floods, for irrigation, or both?

Mr. WARNE. It is a multiple-purpose dam. It serves many purposes.

Mr. MILLER. A flood-control dam and a dam for irrigation really are opposite in their nature. If you want to control floods you want an empty dam to start with. If you want to irrigate, you want a full dam all the time. So you run into those two conflicting thoughts. Are you controlling floods or getting water for irrigation?

Mr. WARNE. We can work it out so that the same dam built to a slightly different height and creating a little larger reservoir, will serve adequately those purposes.

Mr. MILLER. Then the dam for flood control must be empty, or at least capable of storing up more water?

Mr. WARNE. That is right. You dedicate certain strata of the reservoir to flood control and you say that it is available for flood control.

Mr. O'CONNOR. Let me get clear on that. I had always been under the impression that when you built a dam you built it for the purpose of creating a reservoir.

Mr. MILLER. If it is for irrigation; yes.

Mr. O'CONNOR. If you build a dam you will necessarily have a reservoir, no matter for what purpose.

Mr. MILLER. Yes; but if it is for flood control it must be empty. You cannot have water in there if you are going to control floods.

Mr. O'CONNOR. You have different methods of letting the water off?

Mr. MILLER. Yes.

Mr. O'CONNOR. You have spillways and other methods?

Mr. MILLER. Yes.

Mr. HORAN. The storage dam will have to be empty when the floods come. It has to be in order to be of value.

Mr. MILLER. It is also true that if you are going to have a dam for flood control and you keep it full of water for irrigation, it is no good for flood control.

Mr. WARNE. That is why we use it for more than one purpose. We take those things into consideration. This particular dam is very favorably situated, because the rainfall in that area is pretty regular in its habits. The rainfall averages go up and come down, of course, from year to year, but you can usually tell when the peak will come. This aids in the control for flood protection, but it does not conflict with irrigation storage.

Mr. MILLER. I can see how it can be worked out and used for dual purposes.

Mr. O'CONNOR. I would like a little further explanation on that. Supposing we build a dam for multiple purposes, power, reclamation, irrigation, and so forth, is it not possible to regulate the amount of water in the reservoir to accomplish all purposes so that the dam, in other words, will accomplish all purposes?

Mr. WARNE. Yes. If the dam is designed for that purpose, it is possible, and it is done.

Mr. O'CONNOR. As a matter of fact, in all these northwestern territories the dams must be built along that line, because if they are built entirely for flood control, then all irrigation projects are out.

Mr. WARNE. I do not think you want in the West to use up your dam sites any more for single-purpose dams.

Mr. O'CONNOR. No; they have got to be for a multiple purpose.

Mr. WARNE. Unless they are unfeasible for multiple use for reasons that are of a physical nature.

Mr. O'CONNOR. In the Northwest if we cannot build multiple-purpose dams we do not want any dams, because that would destroy our irrigation.

Mr. HORAN. We have some dams that come pretty close to being power dams and little else, and it is especially nice when we get one like this, which is purely a multiple-purpose dam.

Mr. WARNE. The physical characteristics of the dam site and of the river and the area determine the potentialities of a site for different uses. But where you have the possibility of building a dam that will

serve more than one useful purpose, we are inclined to think it is foolish to build one that serves only a single purpose.

Mr. HORAN. I was thinking of Umatilla. If we expect to build it we will build it for navigation mostly. Grand Coulee is one of the finest examples of the potential multiple-purpose dam. Rock Island was built entirely for power. Foster Creek, if it is ever built on the Columbia River, will be the outstanding power dam in the United States, and one of the best in the world. Shpissaw was built entirely for power.

Mr. WARNE. If you consider the whole Columbia River development as a single project, then you will see that those dams are multiple-purpose dams, all the way down the stream from Hungry Horse to Bonneville.

Mr. O'CONNOR. I had in mind a proposal to construct a dam on the Yellowstone River in Montana. If we could not have a multiple-purpose dam there we would destroy our irrigation project, if it is all flood control.

Mr. MURDOCK (presiding). I think it might be well to ask Mr. Warne to appear again. He needs to go to another committee, and we have some other witnesses waiting.

Mr. MILLER. There is one question that I would like to ask Mr. Warne particularly. I do not see why it is necessary to introduce a bill for this dam. Are they not building dams all the time without bills? In other words, in our State we have half a dozen proposed projects, and it was understood that if they went through the War Food Administration and certain bureaus downtown they would automatically be built. I just wondered what the difference is between the necessity for this bill and the fact that we do not have to have bills for those other dams. Is that a proper question for a man who is not a lawyer?

Mr. WARNE. The projects you are speaking of are projects that are found feasible and, therefore, are considered under the reclamation law or under the Water Conservation Utility Act to be authorized direct. This one is not reported in a manner which would bring it under one of those acts.

Mr. O'CONNOR. Either you have to have an authorization or an instruction to proceed. Of course, the bill as originally introduced provides for such an appropriation as is necessary to carry it out; that is, an authorization for such appropriation. Here are the mechanics of the thing. Supposing we pass this bill; then we have got to go before the Appropriations Committee of the House and get the necessary funds with which to carry it on. It has got to pass the Appropriations Committee and then to pass the House, and the same in the Senate.

Mr. MILLER. It is desirable to have the approval of the various agencies?

Mr. O'CONNOR. Yes. It "greases the skids," so to speak. A lot of bills have passed Congress and been approved by the President that did not have departmental approval. We have not reached the point yet where this is a government by departments, and I hope we never will.

Mr. MURDOCK. We thank you for your statement, and we may want to ask you some further questions at a later date.

Mr. WARNE. I shall be happy to come back, sir.

Mr. MURDOCK. We have with us this morning Mr. Buck, an engineer from Montana.

Mr. Buck, can you make us a brief statement? I believe you are also expected to appear before another committee.

Mr. BUCK. Yes, Mr. Chairman. I have to appear before a Senate committee on this same matter.

STATEMENT OF FRED E. BUCK, STATE ENGINEER, STATE OF MONTANA

Mr. BUCK. I have a written statement prepared by the Governor of Montana, and he wishes to have it entered on the record. On account of the shortness of time I will not read it. If you will accept it, I would like to place it in the record.

Mr. MURDOCK. We will accept it as read into the record.

(The statement referred to and submitted by the witness is as follows:)

STATEMENT OF HON. SAM C. FORD, GOVERNOR OF THE STATE OF MONTANA, PRESENTED BY FRED E. BUCK, STATE ENGINEER

To the Honorable Compton I. White and Members of the Subcommittee of the Committee on Irrigation and Reclamation, House of Representatives:

I express the wishes of the people of Montana in favor of the passage of House bill No. 3570 authorizing construction of the Hungry Horse Dam. This proposed project is located on the South Fork of Flathead River, headwaters of the Clark Fork of the Columbia River. It will be a multiple purpose project, serving irrigation, power, and flood control, with the prime benefits accruing to irrigation and power development.

Last spring it seemed apparent to the Bonneville Power Administration that unless additional storage could be secured on the Clark Fork River there would be a deficiency of power at Grand Coulee and Bonneville to supply the needs of industrial war plants in the Pacific Northwest. The Army engineers were therefore called upon to make an investigation of the possibilities of securing additional storage that could be developed quickly, with the use of minimum strategic materials and labor, and thus avert a power shortage. After completing their investigation, it was concluded that Flathead Lake in Montana provided the best site that could be built under the conditions to serve the purpose. After this plan had been temporarily decided upon, a public hearing was held at Kalispell which resulted in a very definite denunciation of the plan by the local people.

Flathead Lake is already controlled at high water level by the Kerr Dam at the mouth of the lake and it was proposed to increase this storage by both raising the height of dam and dredging the outlet. This proposed increase in storage would have inundated some 43,000 acres of the best farming lands in the State of Montana, as well as hundreds of summer homes, many towns and small villages, portions of highways and a railway, telephone and power lines, several commercial industries, and would have erased thousands of dollars from the tax rolls.

After the hearing was concluded and the Bonneville Power people and the Army engineers fully realized the economic disturbance that would be caused by increasing the storage at Flathead Lake, they were sympathetic with the contentions of the local people.

In discussing the matter subsequently with the Federal authorities, it was deemed wise to organize some type of planning board wherein the States could take an active part in planning the development of the Columbia Basin and thereby liquidate the question of infringing upon States' rights. This resulted in the Governors of the five States included within the Columbia River Basin—Montana, Idaho, Wyoming, Oregon, and Washington—assembling at Boise, Idaho, and organizing the Northwest States Development Association. The purpose of this organization was to set up a constructive plan of an orderly development

of the entire basin, whereby the rights of each State would be incorporated into a well-balanced over-all plan. All the Federal agencies involved were very cooperative in lending their assistance and advice to the association and assisted in every way possible in developing the plan. This association has now progressed to the point where its first printed report is available, which contains its entire program of emergency and immediate post-war projects.

It is a recognized principle of engineering and economics that the logical development of any stream should begin at its headwaters and proceed downstream. By this method the greatest multiple use of water can be accomplished. Following out this basic principle, one of the first projects set up by the Northwest States Development Association in the above-mentioned report was the Hungry Horse Dam and Reservoir on the South Fork of Flathead.

The Bureau of Reclamation is now making surveys of an irrigation project in the upper Flathead Valley which will embrace some 80,000 acres of land to be served by both gravity and pumping. By constructing the Hungry Horse Dam, the flow of the river can be regulated to insure the needs of this irrigation project and at the same time develop power for pumping water onto areas situated above the proposed gravity canals. Also construction of the project will reclaim about 8,000 acres of rich agricultural land along the Flathead River Valley, which is now inundated during flood periods, and will solve, partially at least, the requirements for more storage to operate the power plants at Grand Coulee and Bonneville.

One of the basic problems that will confront the Nation after the close of hostilities will be the decentralization of industries, and in this connection let me call your attention to the fact that Montana is rich in undeveloped natural resources which are awaiting a supply of large blocks of cheap industrial power. In the western part of the State are immense stands of virgin timber that is being used now on a small scale for lumber, ties, poles, etc., but if cheap power could be made available, it would be the incentive to initiate the construction of paper pulp mills and wood chemical plants to produce basic materials for use in the manufacture of plastics. We have mountains of phosphate rock that would be turned into commercial fertilizer. There are undeveloped mineral deposits of many kinds; clays, insulation materials, crystals, iron, petroleum, coal, etc., which can be converted into the channels of manufactured merchandise whenever cheap power can be made available. Transcontinental railroads operating across the mountains may afford another potential market for commercial power.

By construction of the Hungry Horse Dam, this territory will eventually have the same advantages as the area served by the Bonneville Power Administration and make it possible to interest capital in our wealth of undeveloped natural resources.

We know that the flow of our streams fluctuate from year to year and pass through cycles of both low flows and high run-offs. Undoubtedly we will have reoccurrences some time in the future of a series of dry years which may bring about a period of water shortage to operate the power plants at Grand Coulee and Bonneville as well as other plants that may be built along the Columbia River, making it imperative to secure additional storage in the upper reaches of the river. If this present bill providing for the authorization of constructing Hungry Horse Dam fails of passage then the question may come up again of using Flathead Lake to provide the necessary storage; and regardless of how sympathetic the governmental agencies might be toward the local community, the urgent requirements and the shortage of time may make it imperative that storage at Flathead Lake be developed to meet the emergency.

Construction of Hungry Horse Dam, in contrast to the proposal of developing additional storage at Flathead Lake, will not inundate towns, small homes, highways, railroads, industries, etc. The site is located in a mountainous canyon in a national forest and therefore will not reduce the tax value of the State and will not take any agricultural land out of production so vitally needed at the present time for food. It will provide extra storage needed for power at Bonneville and Grand Coulee, regulate the flow of the river for the irrigation of 80,000 acres of land and the protection from flooding of 8,000 acres of agricultural lands in the upper Flathead Valley, and supply power for pumping to other lands. Furthermore, it will be an excellent project to supply post-war employment, and the new land put under irrigation will offer new homes to returning soldiers.

This project is not one that is newly conceived. The people of the upper Flathead Valley have been endeavoring for at least 25 years to have this project

constructed; I strongly urge you at this time to give it your favorable consideration, knowing that it is a project well worth while and one that must be built before we can expect any measurable increase in the manufacture of goods from our natural resources, a guaranty of a water supply for the Kalispell irrigation project, and insurance that the economics surrounding Flathead Lake will be stabilized.

On behalf of the people of Montana, I thank you for the opportunity of presenting this statement.

SAM C. FORD,
Governor of Montana.
By FRED E. BUCK,
State Engineer.

Mr. O'CONNOR. Could not Mr. Buck make a brief oral statement?

Mr. MURDOCK. Yes; we shall be glad to have you make such oral statement as you wish, Mr. Buck.

Mr. O'CONNOR. First, your official position, Mr. Buck, is what?

Mr. BUCK. I am State engineer, and I have come here today to represent Governor Ford, of Montana.

Mr. O'CONNOR. You are State engineer of Montana?

Mr. BUCK. Yes, sir.

Mr. O'CONNOR. And you have been State engineer how long, Mr. Buck?

Mr. BUCK. I have been working for the State of Montana for nearly 25 years in various capacities.

Mr. O'CONNOR. As an engineer?

Mr. BUCK. I used to be chief engineer of the Montana Irrigation Commission. Then I was chief engineer of the public utilities commission, and then with the State water conservation board ever since its inception in 1934; and in addition to being State engineer I am chief engineer of the State water conservation board and also am a member of that board.

To begin with, this is not a new project. It is one that has been in the mill for some 25 years. I worked on the old Columbia River Basin Board, and that has been at least twenty-odd years ago. So I know it is not a new project. The matter came to a focus last April after the hearing at Flathead Lake, which resulted in the organization of what is known as the Northwest States Development Association, consisting of the Governors of the five States in the basin—Montana, Idaho, Wyoming, Washington, and Oregon. They have had several meetings this past summer and fall, and finally got out their plans for immediate post-war work; and one of the projects in that plan is this Hungry Horse Reservoir.

It has been stated here before that this is a multiple-purpose project. It will conserve and stabilize the water supply for some 80,000 acres in the Kalispell irrigation district. It will also reclaim the 8,000 acres along the river valley which are now being flooded. It will generate power both for pumping irrigation water where the gravity canals do not reach the land, and will also supply power for industrial use.

We are particularly interested in power for industrial use in Montana. We have a great many types of raw materials up there that can be manufactured if we only had the power. Power must precede the development. We have a great many metals of different kinds. We have coal, petroleum, insulation materials, and we have immense forests of timber which can be manufactured into pulpwood and into chemicals which can be used for plastics.

Mr. MURDOCK. If I might interrupt the gentleman at that point: You come from another part of the country a thousand miles away, but I am a member of a subcommittee that is investigating the possibility of power development in the Columbia Basin. This is the first volume [indicating] of the hearings. There are other volumes to follow. For weeks we have heard expert testimony concerning the possibilities that you are mentioning. I want to assure you and the Governor of your State, and the whole Northwest that the subject is being explored as you would like to have it explored, I think.

Mr. HORAN. I wonder if I might ask Mr. Buck if the plant at Eureka is still in existence?

Mr. BUCK. The insulation plant?

Mr. HORAN. I think it was the high cost of power, among other things, that drove out that industry. The sawmill shut down after a series of strikes. The town almost folded up, and then they got a chemical plant in there. They were going to manufacture a base for toothpaste, I think, and it had a hectic history. Is that plant still in existence?

Mr. BUCK. What they were doing was digging up those old stumps, and they were making basically, I think, baking powder. But they finally folded up. I think it was on account of finances.

Then there is another plant in the same neighborhood that has been producing zonolite, a high type of insulation. There is a mountain of it.

Mr. HORAN. That is up at Libby?

Mr. BUCK. Yes. Just south of there we have mountains of fertilizer material that could be processed. There is some being produced there now and being shipped to Trail, Canada, to be processed.

Mr. ROCKWELL. May I ask what kind of fertilizer that is?

Mr. HORAN. Phosphate, is it not?

Mr. BUCK. Yes.

Mr. O'CONNOR. You have large amounts of alumina clay in that section?

Mr. BUCK. Yes; a world of it.

One point that I want to bring out is the value of this reservoir site as compared with what was proposed to be taken from Flathead. On the Flathead site it would take some 43,000 acres of good agricultural land out of production, to say nothing of the many small homes and a few industries, railroads, telephone and telegraph lines, and so forth, that would be destroyed.

Mr. O'CONNOR. The Summers lumber mill would be destroyed or flooded out?

Mr. BUCK. Yes; it would.

Mr. O'CONNOR. And that runs into the millions in investment, does it not?

Mr. BUCK. Yes. They have a pay roll there of something like a million dollars a year.

Mr. O'CONNOR. And they process a tremendous lot of lumber there?

Mr. BUCK. Yes; they do.

Up at the proposed Hungry Horse site there is no farm land to be taken out of production; no railroads or highways or telephone lines to be flooded out; no summer homes to be flooded out. It is up in the mountains and up in the national forest, and it will not decrease the

value of the tax rolls, and the people up there are very much for it. By putting it in that location we will get the benefit for those 80,000 acres of irrigated land and also for the reclaiming of the 8,000 acres that will be flooded, and it will also stabilize the level in Flathead Lake and stabilize the level of Pend Oreille Lake, so that there are a great many advantages there that we could not get if they should use Flathead Lake.

Mr. O'CONNOR. Now discuss the damages. It has been pointed out and reported to the Agricultural Department that there will be quite a bit of damage done to that timber area. I kind of disagree with my friend Mr. Warne. He said over half of it was burned-over lands. I have flown over that country. It looks to me as if two-thirds of it has been burned over and is practically worthless and above timber line. Is not that true?

Mr. BUCK. No it is not above the timber line.

Mr. O'CONNOR. There are about two-thirds of the lands that would be submerged as a result of the dam—that have already been burned over and rendered practically useless?

Mr. BUCK. That is true. There is a large area of it that has been burned over, but I flew over it last summer, and any proportion I could give you that has been burned over as compared with virgin timber would be guesswork.

There is one other point that I would like to put into the record, and that is this: The people in Montana are very fearful that if this bill does not pass there may sometime in the future be a possibility of a recurrence of the Flathead incident because we know that our Northwest waterflows fluctuate up and down. We have a series of wet years and a series of dry years, and if we should get into another period of dry years, as we did in the thirties, and have a succession of dry years, it might come to the point that the Bonneville Power Administration might have to develop some new storage, and do it quickly, and if they should get to that situation, of course, they would naturally pick on Flathead Lake if this bill is not passed.

Mr. HORAN. May I assure Mr. Buck that the intent of the subcommittee, when it went West last summer, was to attempt, with you folks out there, to develop a precedent or a policy that would allow for the orderly and neighborly development of resources belonging to all of us. They do not belong to any one section. We have attempted to segregate the storage dam problem from the rest of the problems. I do not think that enough thought has been given to the storage dam problem, as it is. We have just begun on that. We have had a very enlightening study of the Hungry Horse project. We all know, of course, that in the future sometime we are going to have to go into an unexplored field, as far as domestic political science is concerned, because we are going to have to form an alliance of some sort with British Columbia, as our greatest possibility for the complete utilization of the Columbia River must stem in British Columbia. We know that. We hope to clarify this thing so that no recurrence of that which happened last spring will come about in the future. It is unnecessary and unworkable; we know that.

Mr. BUCK. We certainly appreciate the efforts of the subcommittee out there this summer.

Mr. O'CONNOR. We were trying to make a record so that, just as Mr. Horan said, it would establish a policy so that such a thing would

not occur in the future. I think we are taking some pretty rapid steps toward that end.

Mr. BUCK. You certainly are.

Mr. MURDOCK. What tributaries of the Columbia River flow through Canada?

Mr. BUCK. The Kootenai River rises in Canada and flows southerly into the northwest corner of Montana and makes a short loop and crosses the northeast corner of Idaho, and then back into Canada again, and then dips south and flows into the Columbia just about at the international line. The main Columbia itself rises in Canada. There are many tributaries there.

Mr. MURDOCK. The Flathead River flows what distance through Canada?

Mr. BUCK. Just a small area on the north fork of the Flathead River which rises in Canada, only a short distance from the line. It is very minor.

Mr. HORAN. With reference to the Glacier Park dam in the same area, which has some similarity to the Hungry Horse, would the storage dam reach up to the Canadian border?

Mr. BUCK. Yes; I believe it would. Of course, one bad feature about that is that the north fork of the Flathead River forms the west boundary line of Glacier National Park, and if the Glacier Park dam were built, of course part of the flooded area would be over on the edge of Glacier Park; and if you will recall a number of years ago what an awful uproar went up when it was proposed to build a dam on Yellowstone Lake in Yellowstone Park; I think that we would have considerable trouble with the National Park Service and probably there would be a public policy against it.

Mr. HORAN. That is one thing that would have to be gone into. I feel that the Park Service should cooperate with us. I do not think it would all be lost. I think that Hungry Horse would not interfere with the recreational features there, although some of the boys said it was a very fine hunting ground. They told us that at Missoula. I think that that should be gone into exhaustively with the Park Service, if it is even semidesirable that the Glacier View Dam should be built, because it will provide an additional amount of storage space, if it does not interfere with too many mineral or other values there. When you consider that we have to have better than 30,000,000 acre-feet of storage in order to make the Columbia completely efficient, we are going to have to look into and explore and exhaust all possible sites.

Mr. MURDOCK. I cannot speak, of course, for the gentleman from New Mexico [Mr. Fernandez] or the gentleman from Colorado [Mr. Rockwell], but speaking for myself, the three of us are from another river basin and we are looking with great interest upon the development of the great Columbia River Basin involving, as it does, several States, to see how it can be done to the maximum in a neighborly spirit. That is pretty nearly the situation in the Southwest. We assure you of our sympathetic interest in the maximum development of the Columbia Basin.

Mr. BUCK. We certainly appreciate it.

Mr. MURDOCK. Did you have some questions, Mr. Rockwell?

Mr. ROCKWELL. Just one question bearing on this.

You said, Mr. Buck, that you had been connected for many years with the water conservation board of the State. In projects of this kind you do not have any fear, do you, of the State losing control over its own water rights?

Mr. BUCK. Well, that question, of course, has come up in Montana. We had that question up some 3 or 4 years ago on the Missouri River in connection with Fort Peck. We were told very definitely at one meeting at Helena, by the Army engineers, that they wanted us to keep our hands off any more water in the upper Missouri River Basin, because that belonged to Fort Peck, and they had a prior use on account of building Fort Peck Dam. We do not want the same thing to happen over on the west slope.

Mr. ROCKWELL. In other words, you think that we from the west particularly should try to see to it that the States reserve at least their present water rights as against any Government encroachment. Is that it?

Mr. BUCK. Yes. That was really one of the prime reasons for organizing this five-State association, called the Northwest Development Association; the idea being that each State would set up its entire program of development and its entire program of water uses. Then each of those State programs would be incorporated into one over-all program, and by doing it in that way each State would reserve unto itself what it felt it needed and could beneficially use.

Mr. ROCKWELL. Those are water compacts?

Mr. BUCK. Yes. Going on a little further, as these plans are developed and are finally completed, then they will work out a schedule of use of the water in each State and what is released to the next State below, and from that they will build up a water compact and then ask Congress to authorize such compact and try to get it through the legislatures and approved by Congress. That is what the ultimate aim is. But you have to go through all this preliminary planning and developing before you can get to that point.

Mr. HORAN. I think the same relationship should exist with regard to the Columbia River as is presumed to exist between the States and the Federal Government. There are certain features of the Columbia River as it flows from the watershed to the east that you can say belong to all the States involved in that flow of water. But there are other features that should be reserved to the States. I am hoping that by counsel and by discussion and by observation and experience and by keeping the five-State compact and its good relationship alive, we can meet the situations as they arise and protect each State in its own territory. We have got to be a good neighbors out there, and we do not want this feeling of exploitation to go any further.

Mr. BUCK. In carrying out that program the basic thing to remember is that the development should begin in the headwaters and on downstream, and in that way get the greatest use of the water, the multiple use.

Mr. HORAN. I asked the Department of the Interior to bring up a cross-section map showing each dam and showing the river on up. I asked also to add on to that at the higher reaches that portion which could be called storage dams above Grand Coulee. I believe it will give us a better picture of multiple use to at least visualize that part of it.

Mr. BUCK. I think the Geological Survey can give you that.

Mr. HORAN. They have one, but they did not have the storage dams pictured on it.

Mr. O'CONNOR. Mr. Buck, you say that 3 or 4 years ago the Army engineers made the statement at Helena that they wanted you to keep your hands off the upper waters of the Missouri River?

Mr. BUCK. That is true.

Mr. O'CONNOR. Did they take the position that any rights created in the Federal Government because of the construction of Fort Peck Dam would in any wise interfere with the vested rights of the farmers of that country in the use of the water for irrigation purposes?

Mr. BUCK. No; they did not claim any priority over the rights that existed before they came into the situation. It was just future development.

Mr. O'CONNOR. We are familiar, I think, with our ownership of water in Montana. I think that under the laws of Montana, Montana is the owner of the water in the State until it flows outside of the State, and that when you appropriate water, you appropriate the use of it, and you only get the use of it; you do not get title to it.

So, in view of that fact, it seems to me that if they took the position that the title to the waters of Montana is in the Federal Government, the State of Montana would be in direct conflict with its own State laws.

A member of the circuit court in a case arising between the water associations of Broadwater County and the Montana Power Co., wrote a very elaborate dissenting opinion, and it was published in full in the Great Falls Tribune, and I read a great portion of it. It commented upon the laws of the State. Under our laws the water belongs to the State while it is within the State, and it does not become the property of any other State until it passes out of our State. If the Federal Government lays claim to that water contrary to the rights of the State of Montana, there is a direct conflict, it seems to me.

Mr. BUCK. As I recall it, the legal aspect of the situation was not discussed at the time. This was at a meeting of the Missouri Basin Committee of the National Resources Board, and there was quite a big delegation there from all over the United States, and the question came up about the future development of the headwaters of the Missouri River. I remember an Army officer made a protest at the time that Montana should not look forward to any more new development on the upper reaches of the Missouri River because the Government had established prior use of that water on account of having built Fort Peck Dam.

Mr. O'CONNOR. I do not think that is the law.

Mr. BUCK. They did not go into the legal aspects of it.

Mr. O'CONNOR. But that statement was actually made, was it?

Mr. BUCK. Yes. We have a transcript of the hearing in our office.

Mr. O'CONNOR. That is very interesting.

Mr. ROCKWELL. That is the reason I brought it up. I think that wherever we can we ought to bring out the proposition, if you feel as I do, that the State where the water originates is entitled to the protection of the State laws before the Federal Government.

Mr. HORAN. I think Montana has had some really trying experiences in the last 3 or 4 years. Everything has been taken away and nothing added.

Mr. O'CONNOR. We have been exploited: there is no question about that.

Mr. HORAN. I am on your side.

Mr. O'CONNOR. I am trying to safeguard the rights of every Western State to the use of its own water, for its own primary purposes, before it is monopolized by the Federal Government.

Mr. BUCK. Montana is a semiarid State.

Mr. O'CONNOR. Not only semiarid, but it is an arid State.

Mr. BUCK. It is against the laws of economics to take water out of an arid State to some place where it is not needed.

Mr. MURDOCK. In your constitution or laws do you have the law so common on the west coast, the law of prior appropriation of beneficial use?

Mr. O'CONNOR. Yes. We appropriate water there by two methods, or we regulate the use of water by two methods: One, by actually appropriating the water to a beneficial use, which may be done without any statutory compliance at all; the other by filing notice with the county clerk and recorder and posting notice that you are appropriating the use of many many inches of it, and then you have a reasonable length of time within which to complete your appropriation. However, the title to the water in Montana remains in the State, but the use of it may be appropriated by those two methods.

Mr. MURDOCK. The use of the water goes with the land?

Mr. O'CONNOR. Not necessarily. Supposing you have 160 acres of land. That water ordinarily is decreed to the use of that land. It may, however, be used on other lands if in the use of the water on other lands it does not interfere with subsequent appropriators.

Mr. MURDOCK. We thank you, Mr. Buck, for your statement, and we ask you to express our appreciation to the Governor for the statement which you have brought from him.

Mr. O'CONNOR. And tell him we are sorry that he could not come down here with you.

Mr. BUCK. He was very sorry also. Thank you very much.

Mr. MURDOCK. We also have another gentleman from Montana, Mr. Winkler, chairman of the Montana State Highway Commission and member of the Northwest States Development Association. He, too, must leave to appear before another committee, so we will accept his statement and attached letters to appear in the record immediately following the statement of Mr. Buck, Montana State engineer, and the Statement of the Hon. Sam C. Ford, Governor of Montana.

(The statement referred to, with attached letters, submitted by the witness are as follows:)

STATEMENT OF A. F. WINKLER, CHAIRMAN, MONTANA STATE HIGHWAY COMMISSION, AND MONTANA MEMBER OF NORTHWEST STATES DEVELOPMENT ASSOCIATION

Mr. WINKLER. Mr. Chairman and gentlemen, I am due to appear before the Senate committee in a very few minutes since they are also holding hearings on this bill, and Mr. Treloar will furnish you with the information I had planned to give you.

However, I would like to have included in your records three short letters—from one of our school teachers and two of his pupils. At first thought they may seem immaterial, but I feel that they convey more than any words of mine, the unanimity of our people. In the cities and on the farms, in the sawmills, on the cattle and sheep ranges, even in the schoolrooms, our people are solidly united behind this bill. This is not class legislation or partisan legislation; it is the plea of a united people for what they believe to be right and just. They believe—all of the people of the State of Montana believe—that this is the most important piece of legislation they have ever asked of the Congress, and that its enactment will benefit them and the entire Northwest for all time; and that it is a multiple purpose, self-liquidating project which will pay for itself and place no burden on the American taxpayers.

KALISPELL, MONT., *January 24, 1944.*

HON. COMPTON I. WHITE,
Washington, D. C.

DEAR MR. WHITE: Two of my pupils asked if I would forward letters they had written you. There are several errors, but the youngsters were so much in earnest I could not bear to ask them to rewrite their letters.

Very sincerely,

V. R. CREVELING.

KALISPELL, MONT., *January 19, 1944.*

HON. COMPTON I. WHITE,
Reclamation Committeeman, Washington, D. C.

DEAR SIR: In our class in school we were discussing the Hungry Horse Dam project. We were talking about the factories that would be built if the dam project went through. Kalispell would be a larger city with more people, and when the war is over the servicemen who didn't have jobs could easily get one here.

We know you have the influence to win for us, and we would like very much if you use it that way.

Friends in my class are writing to Secretary Ickes, both Senators, and Representatives. We feel sure they will help us. Won't you?

Sincerely yours,

JAMES HENKLE.

KALISPELL, MONT., *January 19, 1944.*

CONGRESS OF THE UNITED STATES,
Washington, D. C.

DEAR SIR: The people of Flathead Valley are looking forward to the Hungry Horse Dam. Please don't let them down. Your job is to watch the welfare of Montana as well as representing our State. As you know, there has been a great deal of talk about the dam. Now, instead of looking at it in the way of thinking, we have gone so far as the planning of it. We are looking forward to having the Flathead Valley one of the most prosperous valleys in our Nation, and it will on one possibility: that is the Hungry Horse Dam. Flathead can take care of her Senators and Congressmen only if they take care of Flathead.

We appreciate your kindness to Flathead in the past year or years. We would appreciate it even more if you help Flathead in our present proposition. We here in Flathead Valley cannot force you to do anything, nor can we stop you. We will try our best in persuading you to see what we are looking forward to.

I thank you on behalf of Flathead for reading this letter.

Cordially yours,

JOEL L. KOFORD.

Mr. MURDOCK. Gentlemen, we have present one other witness, Mr. Treloar, from Montana, who, I believe, is ready to make a statement.

**STATEMENT OF DONALD C. TRELOAR, SECRETARY OF THE
FLATHEAD VALLEY CITIZENS COMMITTEE**

Mr. O'CONNOR. How long have you lived in that section of the State?

Mr. TRELOAR. Sixteen years. I have lived in Montana for 38 years.

Mr. O'CONNOR. What has been your business?

Mr. TRELOAR. I am the owner of radio station KGEZ. Previously I was secretary of the Kalispell Chamber of Commerce.

Mr. O'CONNOR. I believe you testified before the subcommittee, consisting of Congressmen White, Horan, and myself, at Kalispell last summer, when we held a meeting there in regard to the raising of Flathead Lake.

Mr. TRELOAR. That is true.

Mr. O'CONNOR. And your statement appears in the record?

Mr. TRELOAR. Yes. We have prepared a statement on behalf of the Flathead Valley Citizens' Committee, and it is submitted by Al F. Winkler, president of the organization, and myself as secretary, and the statement will also go to the Senate. I desire to read this statement, Mr. Chairman, and then I would like to comment on some of the points that have been brought up here today. I may be able to make references that will be very helpful to this committee. I will try to be as brief as possible, because I know that you are all busy.

First of all, we desire to thank this committee for its sincere interest in the problems of Montana, particularly its interest in the Flathead Lake proposal which came to the front in Montana early last year. Subsequently your committee conducted, through its subcommittee, a hearing investigating the matter and you have the reports before you of those hearings. We especially desire to thank you for the subcommittee report, which we feel is a very splendid and comprehensive piece of work.

During the course of the hearings conducted during 1943 by the Army engineers the proposal to raise Flathead Lake was defeated and an alternate program of development for the State of Montana was presented.

The Hungry Horse Dam is nothing new. We would like to present some pertinent data from a hearing held before this committee during the first session of the Seventieth Congress on a bill for the adoption of the Columbia Basin project, H. R. 7029, January 16 and 17, 1928.

Let me quote from the record of that hearing, first, a statement of Mr. Eugene Logan, consulting engineer, Spokane, Wash.:

Hungry Horse Reservoir will serve a threefold purpose; first, irrigation of Kalispell Valley and around Flathead Lake, an acreage of perhaps 50,000 to 100,000 acres; second, power at the dam site and stabilizing the flow for potential power development on Flathead River below Flathead Lake; third, the reduction of flood heights on Flathead Lake and Pend Oreille Lake.

Let me further quote from the statements of Mr. Scott Leavitt, then Congressman from Montana and a member of this committee:

Why not include the Hungry Horse development as a part of the Columbia Basin project at this time, so that it will not be something that is like the nebular hypothesis—in the future—let us have it as part of the project at this very time.

To quote Mr. Leavitt further:

Therefore, in order to meet the situation on those two lakes—

He was referring to Flathead and Pend Oreille—

the Hungry Horse is really an essential part of the project from the beginning, unless you ignore that other situation. That is what is arousing the interest of the people living around Flathead Lake. I may say in connection with this matter that Flathead Lake is not in my district in the State of Montana, but as a citizen and representative of that State I want to state the views of the people there. Most naturally, they are very anxious to know just what is to be done and what the ultimate result might be.

Unless we are to ignore the state of mind of those people in the section likely to be affected, why not include in beginning storage on the Hungry Horse and let it be known that the Flathead Lake is unnecessary, so that development of the Flathead Lake from a power standpoint and the protection of its shore line may be considered from the start-off rather than as something we might have to look for in the future.

That was almost 16 years ago, almost to the day, and the people of Montana still have this question hanging over their heads. We believe, gentlemen, that the insecurity thus caused, has definitely retarded development in Montana and that resulting instability has cost many times over the price of the stabilizing influence of Hungry Horse Dam.

Since the date of the hearing mentioned some developments have taken place downstream on the Columbia River which have greatly aggravated our insecurity. We were faced with the threat of emergency by the War Production Board in the spring of 1943, resulting from the fact that the war agencies failed miserably to heed the prediction of this very emergency. This is also shown in the Report of Testimony and Statements, etc., presented at a hearing held May 26, 1941, before the Army Rivers and Harbors Committee at Washington, D. C., at which Acting Chief of Engineers Maj. Gen. Thomas M. Robins presided. We herewith submit the official transcript of that hearing for this record.

These same agencies again appear to be lacking in perspective and initiative. It appears, therefore, to be definitely and conclusively established that Congress must see the necessity for upstream development on the Columbia River at this time to cure a situation which other Federal agencies have failed to remedy.

There are now certain other Federal agencies interested in the development of the Columbia River, who, since the effort to raise Flathead Lake was made, have definitely recognized the necessity for the immediate construction of Hungry Horse Dam.

Further, as a result of the Flathead Lake-Pend O'Reille effort, the Governors of the five Northwest States united on a program, fair, feasible, with benefits to all States, and harm to none. It is a program that will not only assist the war effort, but one which will permanently establish the economy of the region.

We quote from page 4 of the report of the Northwest States Development Association, which is an organization of the Governors of the five Northwest States—Oregon, Washington, Montana, Idaho, and Wyoming—adopted at their fourth meeting held in Spokane, Wash., December 18, 1943:

Upstream storage and upstream uses of water for irrigation, power, and other purposes must have high priority both in the interest of upstream economic

development and in that of better regulation of stream flow and repeated uses of water.

The multiple-purpose principle must be followed in the interests of project feasibility, economy, and surest economic returns and broadest benefits. In the application of this principle, attention must be given to the highest or most vitally significant uses of water in various drainages. In general, domestic and irrigation uses will be considered superior.

This organization of Governors is agreed in their recommendation that Hungry Horse Dam is an immediate necessity.

We would like to insert, as a part of your record and for your convenience, a copy of the report, which you have before you, Mr. Murdock. My copy is in Kalispell. Mr. Buck had to take his to the Senate meeting. Mr. McBride has a copy that he can use for any needs that he has with reference to it.

(The document referred to and submitted by the witness was filed with the clerk of the committee.)

Mr. HORAN. I wonder if you will touch on the present lack of snow in the hills?

Mr. TRELOAR. Yes; I will. I am coming to that.

In 1941 there was skepticism about these emergency projects. There is this same skepticism now with respect to emergency projects. A year ago we almost took for granted that the war in Europe would be concluded as early as 6 months ago. The Tehran Conference and the situation which has developed with respect to the Polish border certainly does not point toward confidence in an early end of hostilities. The situation in the Pacific, even though hostilities in Europe might cease, cannot be minimized, especially as it involves the Pacific Northwest. Heavy war industry, with its resultant tremendous transportation problems, is being moved to that region. These factors, plus a threatened dry cycle, now so evident in the Northwest States because of lack of moisture since last June, emphasize and reemphasize the serious necessity for the development of the Hungry Horse project.

I might interpolate there, with reference to the snow situation, that we received word just day before yesterday that no snow has yet fallen west of the Divide. Coming East a little over a week ago we passed through some snow, along about Minot. It was very little. Mr. Buck reported that in Helena they had a fall of about 4 inches, ranging up to 8 inches on some of the passes, at the time he left.

Now, gentlemen, snow in our country is vital. It is vital to the entire war effort, because it is those waters that are stored at Grand Coulee and that run through Bonneville generators. Any additional generators that might be installed in those dams are not going to be satisfactory if you do not have the water to turn them. We are faced with this situation. On the Continental Divide, about 50 miles out of Kalispell, up on the summit, where the snowfall usually ranges up as high as 144 inches, from last reports we had about 12 inches of snow there. That is the situation.

Mr. O'CONNOR. What did you say is the maximum?

Mr. TRELOAR. About 144 inches is the mean snowfall at the Divide.

Mr. O'CONNOR. And at the time you left you had only 12 inches?

Mr. TRELOAR. Yes.

These facts which we have herewith submitted, the recommendation of the five Northwest Governors, this committee's splendid comprehensive report and close attention to this matter, which we feel is vital

to the Nation's welfare, all combine to insure favorable action by the Congress.

That is respectfully submitted by the Flathead Valley Citizens Committee, signed by A. F. Winkler, president, and Donald C. Treloor, secretary.

This committee embraces membership of the Board of County Commissioners of Flathead County, Mont., the Kalispell Chamber of Commerce, State and county Farm Grange, and State and county American Federation of Labor.

Mr. O'CONNOR. Would you mind giving us the amount of the damages, not in dollars and cents, but your idea of the character of land that would be submerged as a result of the construction of the proposed dam and the building of the reservoir?

Mr. TRELOOR. I think the answer to that has already been given in the letter from Mr. Wickard which states that the salvage of timber only totals \$274,000. That is mentioned in Mr. Wickard's letter from the Department of Agriculture. It is a very small amount of timber.

Mr. O'CONNOR. What is the percentage of land that would be submerged with the timber upon it?

Mr. TRELOOR. Of the floodage back from the dam site there is about $3\frac{1}{2}$ miles that is timbered, and the balance of the 29 miles of the storage is burned over. In other words, there is about one-tenth.

Mr. O'CONNOR. That still has standing timber on it?

Mr. TRELOOR. Yes, sir.

Mr. O'CONNOR. That would be submerged?

Mr. TRELOOR. That is right.

Mr. O'CONNOR. How high does that reach? Does it reach as high as the timber line?

Mr. TRELOOR. That lies, Mr. O'Connor, directly behind the dam site; that little strip runs through right behind the dam site across the floor of the valley, and the rest is burned out. You could not have burned it out by hand any better to fit this situation than it has been burned out by God Almighty.

Mr. HORAN. There is a very good picture in the hearings.

Mr. TRELOOR. A very excellent picture in your own record. Back of the dam site, across the floor of the valley, there is a stretch of timber of about 3 miles, the total value of which is only \$274,000.

Mr. MURDOCK. By salvage you mean cutting it in advance of any flood?

Mr. TRELOOR. Yes. It is merchantable.

Mr. HORAN. That would be floated down now to the Somers mill?

Mr. TRELOOR. Yes; or any of the other mills that are operating there.

I would like to explain my statement just a little relative to multiple purpose. We have talked about power development, irrigation, flood control, and navigation, which have been set up as the factors; and storage, of course, is necessary to all four of them. Water will flow only one way. We believe that the Bureau of Reclamation's interest in Hungry Horse Dam is very vital to our irrigation, which was brought out on Tuesday morning, due to the unfeasibility of any diversion dam in Bad Rock Canyon which lies below Hungry Horse; so that the storage that can be secured at Hungry Horse is now a very definite part of the irrigation of those 80,000 to 100,000 acres which, up until a few days ago, was dependent on the Bad Rock Canyon

diversion dam. So, with that dam out of our picture, Hungry Horse is much more real from the standpoint of putting our land into war production.

The figures are not complete, probably for the reason that Mr. Warne said their surveys were not complete, and consequently they could not give us a complete picture of that diversion.

Mr. MURDOCK. What is the distance between Hungry Horse site and the one that you are speaking of?

Mr. TRELOAR. About 3 miles.

Mr. MURDOCK. The proposed one is below it?

Mr. TRELOAR. The Bad Rock Canyon Dam, which was going to be a diversion dam, is below the Hungry Horse Dam. So they could now, perhaps, extend a canal up around the side of the mountain to pick up the water from below Hungry Horse and take advantage of that storage.

Water runs only one way. There will be power developed at Hungry Horse, and we have adequate water storage for that. Power can run both ways and, consequently, we can be compensated easily for any power that we might sacrifice for irrigation out of Hungry Horse Dam by transmission lines that will connect up with the grid system. We need it and we want it, and that must be a part of the program, and on the same rate basis. Otherwise Montana is not on a competitive basis with the rest of the region. We are a part of the region, and we want to be a part of this program.

Mr. MURDOCK. What is the present status of the 80,000 to 100,000 acres? Are they being tilled now through dry farming?

Mr. TRELOAR. They are. I believe I am not out of order in stating that the reclamation engineers who have started some soil analyses there, have told us—and it will undoubtedly be in their full report—that our land will be worthless inside of 20 years, in many areas, if it is not taken care of and built up now through use of irrigation water and rotation of crops.

Forage crops are vitally essential to that country. It is a national dairy country. After the first of July our pastures begin to dry up. Consequently, at the season of the year when production should be increasing our farmers are selling their cows off, and our capacity is dropping down.

Mr. MURDOCK. Is the land which is to be irrigated in private ownership now?

Mr. TRELOAR. It is in Government ownership, I believe, without exception. I think the Army engineers' report says that there is no private ownership. It is part of the Forest Service reserve.

Mr. MURDOCK. It would be the same, then, as an irrigation project on the public domain?

Mr. TRELOAR. Yes, sir. That is, the flooded area lies within the reserve. The land that would be irrigated is privately owned.

Mr. MURDOCK. Then you did not understand my question. That is what I wanted to know. The land that would be flooded is in public domain and almost worthless, but the land to be irrigated is now privately owned?

Mr. TRELOAR. Yes. We will have an established economy. We are bringing some new land into production that heretofore has been classed as marginal land, and we will also be reclaiming some land that has not been used.

Mr. HORAN. I would like to ask Mr. Treloan if he is familiar with some of the things we have done by way of legislation and looking forward to the development of the Columbia Basin as a place where returning veterans and others might wish to go to settle. Have you given any consideration to the development of the irrigation project, or the presentation of it, at least, as a development for the area just following this war?

Mr. TRELOAR. Yes. I would like to give you my opinion on that.

The State of Montana now is receiving back about 300 men a month. Many of these boys are in western Montana. They are coming back with no particular objective in mind. We found a great many of them attempting to buy a little piece of land here and there; but the land they have bought will not be an economic sustaining unit unless they have water on it.

Mr. HORAN. That is right.

Mr. TRELOAR. So that the opportunity is there to bring more intensive cultivation into our valley through this project.

Mr. HORAN. We have taken steps to keep speculation out of the Columbia Basin?

Mr. TRELOAR. Yes.

Mr. HORAN. And also to provide for a limited period of time, 5 years, for the widest possible distribution of Columbia Basin lands, by limiting the size of the acreage to any one man, the old homestead idea, of course, and also to limit the cost of the land and not allow its resale within the period of 5 years, because sometimes, if a project "clicks," the value goes up so high that nobody can keep it going.

Mr. TRELOAR. That is true.

Mr. MURDOCK. I am glad to hear the gentleman from Washington bring that out, and your statement in answer, Mr. Treloar, because that is very much uppermost in our minds. You may have heard, at the conclusion of the session the other day, the chairman appoint a subcommittee to look into that very matter. That is what I was leading up to by my question.

You say that this land that is to be irrigated is privately owned. Is it in large holdings of more than 160 acres, perhaps?

Mr. TRELOAR. No. It mostly ranges from a 40-acre farm to 320 acres, which is tops. If a fellow has 320 acres and is only farming half of it, he would be perfectly willing to sell the other half. It is a country that is adaptable to small farms. It is not like the land in eastern Montana that adapts itself to big operations. Dairy cattle is what we especially would like to go into, but we cannot do it without water for irrigation.

Mr. HORAN. In the Columbia Basin proper we found the same thing you find in eastern Montana. We found land in huge acreage ownership. So we had to do something that is a little bit difficult; we had to look forward to the cutting up of those tracts. But it may be that you have so few who own 300-acre tracts that it would not be worth the strife to anybody to make any exception in that case. It is up to you folks locally. You know what the impact of that would be. I think it is well for the foundation of any project in the post-war era to come from you folks, and then we can build on that and work with you. That is what we should do.

Mr. TRELOAR. We are perhaps not as familiar with that as we should be, and we would like to have an opportunity to discuss it.

Mr. HORAN. It might be well to give you a copy of the antispeculation bill.

Mr. TRELOAR. I would like very much to have it.

Mr. ROCKWELL. How long do you think it would take to build this dam?

Mr. TRELOAR. I am not an engineer. I know the estimates that have been set up by the Army engineers. They said, from 3 to 4 years, or possibly 2½ years with quick priorities. On Tuesday Mr. Warne made the statement that with full speed ahead the construction period could be reduced considerably. He made that statement, but he did not say how long. We think it can be built quickly.

Mr. HORAN. I do not like to mention it again, but when they built the Dangerous Pass storage dam for the Shisaw project temperatures got as low as 40° below zero, and the men could only work 2-hour shifts. When we had a manpower shortage they worked better than 10,000 men, and I think they built it in a period of months, in the northern wilds of Canada. When I hear an estimate of 4 or 5 years it makes me tired.

Mr. TRELOAR. I believe Mr. Warne stated that quite specifically on Tuesday, that the time could be greatly reduced.

Mr. ROCKWELL. It may be that I should know this, but I have not been here very much in connection with this particular bill. My question is, What is the plan of financing? How is the money to be paid back? As I got the picture in listening this morning, this water that you are going to impound is going to be used for two purposes. One is to irrigate some new land that is not now under irrigation, and the other is to help downstream reservoirs that might otherwise not have sufficient water to take care of the lands now under cultivation. Is there a plan on foot by which you are going to charge so much for power and so much for irrigation? Are you going to sell the rest of the water down below?

Mr. TRELOAR. There is a plan. Of course, the financing of a project of this sort must be left up to the Reclamation Service if they build the dam; but there will be power generated, and we understand that they have worked out a form of financing that will not throw any load upon our farmers.

Mr. MURDOCK. We thank you very much for your interesting and informative statement.

(The report of testimony before the Board of Engineers for Rivers and Harbors, referred to and submitted by the witness, is as follows:)

REPORT OF TESTIMONY AND STATEMENTS, ETC., IN RE HUNGRY HORSE DAM, MONT.,
PRESENTED AT THE HEARING HELD MAY 26, 1941

(Prepared for Kalispell Chamber of Commerce, Kalispell, Mont.)

WAR DEPARTMENT,
OFFICE OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., May 26, 1941.

The above-entitled matter came on for hearing before the Board of Engineers for Rivers and Harbors, War Department, pursuant to notice theretofore given to all known interested parties, at the meeting place of the Board, 2 New York Avenue NW., Washington, D. C., at 10:45 a. m., Monday, May 26, 1941, the following members of the Board being present: Brig. Gen. Thomas M. Robins, assistant to the Chief of Engineers, chairman; Col. Roger G. Powell; Col. John N. Hodges; Col. Charles L. Hall; Col. David McCoach, Jr.; Col. Malcolm Elliott;

Maj. Robert E. Coughlin, acting resident member; and J. Ben Walker, executive secretary.

There were present also: Hon. Burton Kendall Wheeler, Member of the United States Senate from the State of Montana; Hon. James E. Murray, Member of the United States Senate from the State of Montana; Jeanette Rankin, Member of the United States House of Representatives from the First Congressional District of the State of Montana; Hon. Compton I. White, Member of the United States House of Representatives from the First Congressional District of the State of Idaho; Ray A. Biggs, civil engineer, representing the Kalispell Chamber of Commerce, 414 Mohawk Building, Spokane, Wash.; C. A. Davidson, Federal Power Commission, Hurley-Wright Building, Washington, D. C.; Frank P. Fenton, representing William Green, president of American Federation of Labor, 901 Massachusetts Avenue, Washington, D. C.; H. J. Kelly, Hungry Horse Dam Committee, Kalispell, Mont.; Donald C. Treloar, Hungry Horse Dam Committee, Kalispell, Mont.; and Charles A. Murray, secretary to Hon. James E. Murray, Member of the United States Senate from the State of Montana.

Thereupon the following proceedings and transactions were had:

Brigadier General ROBINS. We will be glad to hear you any time you are ready, Senator Murray.

Senator MURRAY. I will merely present Mr. Kelly, who has worked on this matter for several years, and he will present the other gentlemen who will address you.

Brigadier General ROBINS. Very well, sir.

STATEMENT OF H. J. KELLY, HUNGRY HORSE DAM COMMITTEE, KALISPELL, MONT.

Mr. KELLY. Gentlemen and members of the Board, I desire at this time to present to you our engineer, for I think that would be the best procedure to follow and we would get along better if we heard from him first. He has gotten up a report in the form of an appeal which I would like to have him introduce.

Brigadier General ROBINS. That will be perfectly all right.

STATEMENT OF RAY A. BIGGS, CIVIL ENGINEER, REPRESENTING THE KALISPELL CHAMBER OF COMMERCE, SPOKANE, WASH.

Mr. BIGGS. General Robins and members of the Board, I have here copies of a formal appeal, prepared in written form, which I would like to present to members of the Board at this time; I have several copies here, one for each member, although there are only two copies that have the four maps referred to in the appendixes.

Brigadier General ROBINS. Thank you; that will be made part of the record.

(The text of the statement referred to is set forth in this record as exhibit A hereof.)

Mr. BIGGS. I have no intention of reading the report in detail and am only presenting it as the written evidence to complete the record. However, I will mention a few of the high points touched upon in that report.

I went to Seattle, to the office of the district engineer, and studied a copy of the interim report there on file in his office, and I must say that I was very well pleased with the conclusion that the dam was a meritorious project simply as a power project, without having to depend upon flood control and other benefits of downstream power to make it feasible. The only part of the conclusion with which we take exception is the fact that you state that the dam should not be built for many years to come. However, you left an opening, as so many engineers do in making reports, and being one myself I know that; you left an opening by saying that in case something should be done or something transpired as a result of which we would need more power in Montana or the Pacific Northwest, then the project might be reopened at any time there would be a demand for the power.

I believe the time has already come when there is a real demand for that power.

The mining industry in Montana is operating and using every bit of power now being produced and if it is to be expanded in any way whatever, or if we come to need any great amount of additional power, this would be the place at which to produce it, I believe.

Furthermore, the dam would create by the release of the stored waters, which amount to 1,441,000 acre-feet storage for power purposes and would increase the

water flow of the Flathead River by 2,500 second feet, which becomes a large factor in increasing the power in all the existing and potential downstream sites.

The first is the Kerr Dam at Polson. That dam is operating with one unit and has foundations in for a second and final unit for which there would not be sufficient water to operate on prime-power basis without the storage in Hungry Horse Dam.

The same thing is true at Thompson Falls. That dam has all of its capacity installed now for the existing flow, I believe, and would justify another unit on the basis of the Hungry Horse release of water. Then, too, the benefits would go on down to the Grand Coulee Dam where the dam is already built and where the storage water in the Grand Coulee Reservoir itself will take care of the first 10 units to be installed; but after that time they would need the storage from the Hungry Horse Dam to bring them up to prime-power production.

The next dam that would be benefited would be the Rock Island Dam, which is already constructed.

The final dam, already constructed and in use, is the Bonneville, and that would be benefited.

The working head of those various dams add up to a total of 622 feet head in the existing dams which soon would be in shape to get benefit from this store of water released at Hungry Horse for power purposes.

Now, as to the general power situation: the picture has greatly changed since last year when your district engineer made his report. We find that the first three units are being installed now in the Grand Coulee dam and much of that power has been allocated and contracted for and a great deal of it already is in use by the aluminum plants operating at Longview and Vancouver.

An appropriation has just been made for a transmission line from the Grand Coulee Dam to the Spokane area in order to open up great industrial projects there for defense purposes. That means that the entire output of the first three units of the Grand Coulee Dam will be more than contracted for before it is even available. That also means that if we are going to treble our production of aluminum, and a large part of that trebling would have to take place in the Columbia River Basin, we would have to use a great amount of additional power.

In other words, we would have to have immediate installation of other units; probably the first 10 at Grand Coulee Dam should be completed as soon as possible.

It takes about 18 months or so to make one of those units; the other 8 could be installed also immediately following that, because if we are really going to get into the defense program in a large way we have to do it by the use of power. This war has become largely a war of power. We cannot produce from our natural resources any metals or any finished products without using great blocks of power, and we have the best potential location for that right in the Pacific Northwest, in the Columbia River Basin, and this particular Hungry Horse Dam is naturally a small item, but it is very important from a strategic point at the very headwaters of the Columbia River watershed in one of the best protected parts of the Rocky Mountain area and with a vast amount of value to be added to the downstream existing dams that could be taken advantage of very shortly. Realizing that, it seems as though this project should be considered advantageously without delay.

Thank you.

Brigadier General ROBINS. Thank you very much.

Mr. KELLY. I would like now to introduce you to Mr. Donald C. Treloar.

Brigadier General ROBINS. Yes.

STATEMENT OF DONALD C. TRELOAR, HUNGRY HORSE DAM COMMITTEE, KALISPELL, MONT.

Mr. TRELOAR. Mr. Chairman and honorable members of the Board, I am not a technical man. I appear as a layman, analyzing, in my own way, the situation as it exists with respect to the power needs in the northwestern area of our country today and throughout the country in this phase of a vast national emergency.

We recognize the fact if it had not been for the foresight of you very gentlemen, and the Army engineers generally, the country would have been facing a

much more serious emergency today than it does, and we may have been faced with a greater bottleneck for power. When this report which is under review was completed, naturally, some of the information that appears in the report, the district engineer's report, was compiled a considerable time before that, but when it was completed we were perhaps a year younger than we are today. At least, since last November, the date of the filing of that interim report, a great deal has happened, and we recognize that this country is being called upon for a production effort that has no basis for comparison in its history, or in the history of any country in the world. When we think of that, when we are thinking in terms of machine production, which, of course, means power, we recognize the fact that the last world war, World War No. 1, was won, shall we say, with horses and men, while this world war will be won by steel, aluminum, copper, manganese, and other minerals, all of which calls for the use of power. As far as the increased need for power today, compared with the need for power in 1916, 1917, and 1918 is concerned, you have no basis for comparison.

So our situation today is one of a tremendous need for additional power. We are not speaking in terms of 100,000 or 200,000 kilowatts, but we are talking in millions, and it is anticipated that the increased power demand in our country will require installation of 20,000,000 kilowatts of added power in the next 4 years. So it appears to us that it is the duty of this Board to create a power reserve. This calls for the establishment of a reserve of power at Pacific Northwest locations for immediate use. We say this because of our physical advantages there. We have the potential power. We have the strategic minerals. We have them in great abundance.

Perhaps the bottleneck in the steel industry is not so much a lack of production on the basis of present capacity as it is the lack of plants; in other words, we need steel mills on the Pacific coast badly now, and we need additional facilities along those lines. There is being considered at the present time the placement of a steel plant in the northwest part of our country near Portland. This much-needed industrial expansion will call for additional power.

We want to remember also that while we have the strategic minerals, while we have the terrain that gives us sufficient head to generate sufficient cheap hydroelectric power, here we also have a lowering water table throughout the entire Northwest country. There is information in our appeal brief on that point.

The downstream advantages already have been demonstrated.

There is another table in our report, which appears as appendix VIII, which gives the benefits of Hungry Horse Dam development to be passed on to power projects downstream in dollars and cents, compiled from a power average based upon figures from the Army engineers' own reports.

The availability of Hungry Horse Dam makes it a feasible, quick construction project; it is only 4 miles from the main line of the Great Northern Railroad and a great many materials to be used in the construction of the dam could be easily transported in there in quick order and, no doubt, that would speed up very materially the time element in constructing the dam. We estimate that rather than the $3\frac{1}{2}$ to 4 year project as is stated in the interim report, this dam could be built during the next $2\frac{1}{2}$ years, and under priorities, perhaps, it could be completed even faster than that, which makes it a dam which naturally comes in on the power picture of the immediate future.

The invulnerability of the Hungry Horse Dam site can best be shown to you gentlemen by taking you out there through the medium of these pictures [distributing various photographs to the members of the Board]. Those two pictures in particular [indicating] will indicate to you our terrain immediately surrounding this site, and you will notice this makes it ideal from the standpoint of vulnerability.

In addition to its invulnerability from the standpoint of physical position, it offers a very finely camouflaged power reserve for downstream equipment already in operation.

In addition to that you have the output of this dam itself.

We have received in the last 24 hours a telegram which I would like to read to you and which says:

"Tremendous deposits aluminum discovered in Hog Heaven country. Tests being conducted now, but results yet undetermined. Sorry can't be of more help."

Brigadier General ROBINS. What is that, bauxite?

Mr. TRELOAR. I do not know. We are in a volcanic country. That is the only information we have. Should it materialize that it is a supply that could be utilized and manufactured into aluminum, there would be no doubt be constructed there immediately a plant to process it which would take the entire generation of this Hungry Horse Dam.

Colonel ELLIOTT. Who sent that telegram?

Mr. TRELOAR. The secretary of our chamber of commerce. We heard of it before we left and were unable to get information. It is signed "Roger Gratteu, secretary, Kalispell Chamber of Commerce."

Now, to briefly summarize:

We do recognize that a national emergency exists and we do recognize that the site is easily available for a rapid construction project; the invulnerability of the site, and its camouflaged aspect from the power reservoir point of view, should be taken into account.

The decentralizing of modern industry today has become of great help to the people of the Northwest.

Again I refer to the foresight of your own Board in planning power reservoirs sufficient to provide power today that is really needed.

We are talking in terms of 20,000,000 additional kilowatts. We would have only 1,000,000 available if 10 units were installed at Grand Coulee now. There will be only 3 installed by July 1942. These generators take a year and a half to half to get, and in one additional year you will have additional power available at Hungry Horse that would absolutely guarantee your Northwestern section of the country the power it needs.

It is, if nothing more, a good insurance policy.

As I stated before, the present challenge to the United States of America calls for a tremendous power output.

I feel confident that the foresight that characterized your Board will continue in the future.

We have high hopes not only that you will build up a power reservoir in the Northwest, but that you will recognize the advantages of this dam as being perhaps the only remaining dam in the United States that is in such a key position from the standpoint of stream regulation and control.

Thank you.

Brigadier General ROBINS. Thank you very much.

Mr. BIGGS. I would like to say a few words at this time.

Brigadier General ROBINS. Yes.

FURTHER STATEMENT BY RAY A. BIGGS, CIVIL ENGINEER, REPRESENTING THE KALISPELL CHAMBER OF COMMERCE, SPOKANE, WASH.

Mr. BIGGS. I would like to make a further statement regarding my forecast for additional power needs in the Nation and would say that that point is cleared up in my report, and I may as well have it in this oral section of the record:

There is now on order to be installed by the end of 1942 additional capacity of 6,000,000-kilowatt new equipment in the United States. My forecast is that this will be doubled for installation by the fall of 1944. There is now 41,500,000-kilowatt installed capacity in the United States. The assured capacity is 35,000,000 to 40,000,000 kilowatts in producing condition. This calls for 50 percent increase of 20,000,000 kilowatts from 40,000,000 kilowatts now, making a total of 60,000,000 kilowatts by 1945.

In other words, adding 20,000,000 to the 40,000,000 already in operation would make a total of 60,000,000 that we will have to have by 1945.

Mr. KELLY. I would like now to present to you Senator Wheeler.

Brigadier General ROBINS. Yes.

STATEMENT OF HON. BURTON KENDALL WHEELER, MEMBER OF THE UNITED STATES SENATE FROM THE STATE OF MONTANA

Senator WHEELER. The only thing I want to say, gentlemen, first, is that I am not an engineer and do not know anything about engineering features of this matter, but I think perhaps some of you people know that I have been advocating this Hungry Horse development for a considerable period of time. We have felt it would be very helpful to the people out there in that community from the standpoint of cheap power and also from the standpoint of using or getting irrigation out of it for the valley down below, and I can only say that from that aspect of the situation I endorse this project particularly.

Then I was told sometime ago that the question was to get a market for some power if we ever developed power there. This was a couple of years ago, and some people came down here at that time stating that if they could develop some power there they could put in some plants and paper mills there with the idea of putting in paper mills and developing paper there. I have not heard from that particular party since that time, and I perhaps have not followed it up as closely as I should have in the last 6 or 8 months.

I have not seen the engineers' report, but I do hope, if possible, you can approve of the project.

Brigadier General ROBINS. Thank you very much.

**STATEMENT OF JEANNETTE RANKIN, MEMBER OF THE UNITED STATES
HOUSE OF REPRESENTATIVES FROM THE FIRST CONGRESSIONAL DISTRICT
OF THE STATE OF MONTANA**

Congresswoman RANKIN. I would just like to make a statement: I think this is one of the projects that would be very helpful, not only in the present emergency but in future times, because it is certain that the water level is not a fixed thing; we do not know what we will need in the way of water in the future. The East is having a little experience in what we in the West experience very often, and if the situation prevails such as is found in the Tennessee Valley where the lack of rain reduces the amount of water, certainly we ought to prepare to have someplace where we can have the water not only for power but for irrigation, and also because it will be of permanent value to mankind to have this water stored, and this is the time to do it, when we realize the value of power and of water for irrigation, and there is no question but what the people in western Montana feel especially in that part of the country that there have been no national defense activities, and, of course, you think in terms of your work, but the work of the whole Nation has to be coordinated, and we have no W. P. A. projects, no way for people to work in that part of the country, and this would not only relieve the necessity for taking a W. P. A. project and putting it in the defense interest, but I think it would help in many other ways, and I think it is one of the projects that is needed especially at this time, and I hope you engineers will realize and feel that it is a scientific problem, because if it is not we do not want it, but if it is scientifically feasible to produce power at that point and conserve the run-off water, I think this is the time it should be done.

Thank you.

Brigadier General ROBINS. Thank you.

Now, Senator Murray, did you want to say something further?

Senator MURRAY. Thank you.

**STATEMENT OF HON. JAMES E. MURRAY, MEMBER OF THE UNITED STATES
SENATE FROM THE STATE OF MONTANA**

Senator MURRAY. Mr. Chairman, there is very little that can be added to the statements just made to you here. I agree with Senator Wheeler and with Congresswoman Rankin that this project should be of vital importance to the country at this time, in view of the fact that we are facing a possible shortage of power.

In our State, Montana, we recently made a general survey of the State with a view of determining what possibilities there are out there to furnish plants in connection with the national defense program, and a very substantial showing has been made in the way of plants that could be utilized in connection with this defense program and a movement is on foot at the present moment to have Anaconda take over the program of pooling these plants for purposes of using them in connection with the defense program.

In addition to that we have recently started the development of an enormous chrome deposit out in Montana which would undoubtedly be of great value to the country at this time, and the Anaconda people have taken over the supervision of the development of that chromium.

In addition to that there is now in process of construction a new plant for the treatment of manganese at Anaconda, Mont., and we have other great deposits of minerals out there that are requiring our attention.

It is believed, with the completion of the new plant at Anaconda, a great quantity will be produced there. They are already producing since the last year, in a plant that is existing at Butte, but the new plant will be more modern and up to date and more effective in the production of manganese.

In the last 4 or 5 years we have frequently had shortages of power in Montana. I believe that you are familiar with that fact, and it seems to me, with the possibility that there may be still lower water supply in Montana in the near future, that the Government should take into consideration the possibilities of this project and what it provides.

As it is shown in the brief that is being filed with you here, the construction of this dam will be beneficial to all the plants below, and it does seem to me that in view of these circumstances and conditions that have been detailed to you here today that there should be every reason for the immediate announcement of the fact that you propose, at once, to commence this project.

I understand that the report of your District Engineer says that "the development of the Hungry Horse site substantially as outlined in scheme IV, table 4, in appendix I, will be justified at such time as there is a market for most of the prime power from the plant."

Now, that interim report was made on November 30, 1940, and since then a great deal has happened in the country and a great deal of new information has come to light, and it seems to me, in view of the present conditions we find confronting us now, there should be no hesitation on your part to go ahead with this.

Again, in connection with the national defense, the report says:

"If a national emergency should require peak operation of the mining industry in western Montana, additional power would be necessary."

What I have just said is taken from your engineers' interim report.

Now, since then the mining industry of Montana has developed tremendously, and with the possibility of expanding even further, and with this new expansion in connection with the strategic minerals being developed there, it seems to me that there will be a big demand for their power, and I certainly hope that this Board will seriously consider this proposal.

Thank you very much.

Brigadier General ROBINS. Thank you.

FURTHER STATEMENT BY HON. BURTON KENDALL WHEELER, MEMBER OF THE UNITED STATES SENATE FROM THE STATE OF MONTANA

Senator WHEELER. There is one thing more that I would like to add, and that is with reference to the question of finding a market for this power. So many times it has been stated in connection with the building of a power project: "If we can find a market for the power!" I remember very definitely when Commissioner Mead was at the head of the Reclamation Bureau, and they put in power sites at various places in connection with the reclamation work done by the country, Commissioner Mead made the statement that wherever they developed cheap power they always found a market for it; that they did not see the possibilities of a market at the time, but he had never known—I very distinctly remember him making the statement—he had never known any of the projects where they had built the plant but what there was always a market developed afterward, and I am sure you won't have any trouble about finding a market for it.

In addition to what has been said with reference to the lack of power, a couple of years ago they had a shortage of power and they had to go out in the State of Washington and bring power to Montana because of the drought, but with the building of the dam down below they probably temporarily have it, but the one thing we do need in Montana, as you know and are aware, is that we need the development of new industries there, and this is over in a district where they have timber that is suitable for making paper, and I have not much doubt but what, if we get cheap power in there, paper mills will be developed. I remember Senator Donlan came here in connection with that, and he had people interested in building a plant over there for the making of paper.

Thank you.

FURTHER STATEMENT BY H. J. KELLY, HUNGRY HORSE DAM COMMITTEE, KALISPELL, MONT.

Mr. KELLY. In connection with what Senator Wheeler has just said, I would like to add that we already have under consideration there this matter of paper mills, and several investigators have been out there as to paper mills being established

there, and we have probably the biggest body of pulp timber in the Northwest right in the north fork and the south fork of this waterway where the dam site is, and these people are very much interested in establishing paper-manufacturing establishments there and I have here an estimated cost and saving, a report from Jackson, Mooreland Co., engineers, in connection with that.

Senator MURRAY. I think that concludes our presentation of the appeal unless you gentlemen have some question that you would like to ask.

Brigadier General ROBINS. I have one question:

Have you taken up with the O. P. M. the question of the necessity for this power in the national defense program?

Senator MURRAY. I have not taken it up with them personally, but we have talked to them about the subject on one or two occasions past, without asking them for any statement on it.

We called their attention to the possibilities up here but we did not deem it necessary that we should have some opinion or ruling from them before coming here, but it seems to me that the recent studies they have been giving to this subject should have made them convinced of the advisability of developing this power. They know what is going on in Montana in reference to the development of these strategic minerals, and they are also familiar with this other object of conserving the industrial productive capacity of Montana, and they have that under study and advisement at the present time.

Brigadier General ROBINS. That is what I wanted to find out, if they are studying that situation.

Senator MURRAY. Yes, they are studying that and they have our report, and I think efforts are being made to formulate a pool out there to carry on active work.

Mr. KELLY. In that connection, we have had it up with the engineer of the O. P. M. and Mr. Biggs has discussed it thoroughly with their engineer.

Will you tell them about that, Mr. Biggs?

Mr. BIGGS. I had an appointment with Mr. Kellogg, the engineer in charge of power at the O. P. M. It was very brief, but quite revealing, and he took a copy of my report and said that he would communicate with me early this week, so I assume I will hear from him shortly, but I did not expect to hear from him before this hearing.

Brigadier General ROBINS. Are there any questions by any member of the Board?

Does anyone else wish to be heard on this question?

Well, there appear to be no other witnesses. Thank you all for coming and I assure you that what you have said will be given very careful consideration.

(At this point it is noted that Congressman White appeared at the hearing.)

Brigadier General ROBINS. Congressman White, did you wish to say something?

Congressman WHITE. Just a few words, if I may.

STATEMENT OF HON. COMPTON I. WHITE, MEMBER OF THE UNITED STATES HOUSE OF REPRESENTATIVES FROM THE FIRST CONGRESSIONAL DISTRICT OF THE STATE OF IDAHO

Congressman WHITE. I came back down here in regard to this Hungry Horse Dam proposition.

I do not think anybody should be much better acquainted with flood conditions of this stretch of the Columbia River than myself. I have lived just above Lake Pend Oreille for about 50 years in the Clark Fork Valley. I saw the disastrous flood in 1894 that came down and put the Northern Pacific Railroad and the other railroads out of commission, and I have been living in that valley and I am experienced in floods, particularly the floods of that valley, and have kept pretty close to it and a close eye on the snow conditions and weather conditions during all of that period and not only have I seen the disastrous flood of 1894, but I saw the flood in 1916 and a number of serious other floods, and a great deal of damage has resulted from the uncontrolled flow, particularly in the river in the time that I have been there.

I might say that I was connected with the railroad and I know what the railroad has to put up with there, and, on several occasions, as a result of the heavy flood, because of the going out of the Flathead River and on to the lake, it has submerged the county, and there have been units along the Columbia River that have impaired the useful employment of that stream for commercial purposes.

I might point out to you that in the mountains, in the Mission Range—that is the ground this river drains, that is one of the places where we have the heavy snowfalls in the West. That whole section, from the Continental Divide down to the Idaho-Washington boundary line is where we have the greatest snows, and, particularly in that section where this river goes through this projected flood-control improvement is where we have some extra heavy falls, the most heavy falls in this country. I may say that in the ranges I am familiar with I know of the snow that rested in the valleys in the upper stretches, as deep as 16 feet. I have been on reconnaissance parties going out on forest surveys and the snow gets very much deeper where the wind causes the drifts. I think that the records will bear me out when I say that there you have an extraordinary snowfall, particularly in those areas where the drifts are, and that creates a necessity for controlling the flood waters on the Flathead River.

We have had on several occasions the whole valley where I live, which is the town of Clark Fork, just west of the Montana boundary line, which has been completely inundated, were a regular occurrence it would be just another flood area, but it comes along often enough to make farming insecure and uncertain and to cause real damage, and not only does it affect people in Clark Fork and in that country generally, but it goes all the way clear down to Lake Pend Oreille and if we could control the flood on the upper reaches of the Clark Fork River a great deal of land would come into use and be used for farming purposes. All of the reaches of that river now subject to flood could be protected.

Now, as to the Forest Service: You know that the Government owns a good deal of timber and land in the forests all along there, so the Government is really interested not only from the standpoint of the value of the land itself but for the use of the lumber.

Some of the main highways, particularly No. 10-A, are subject to flood when the river is extra high, and you have a rather disastrous situation there.

I am going to tell you that from my observation I saw this thing: I saw a day when the river fell 3 miles above Lake Pend Oreille at 3 inches and the same day it raised 18 inches at a farther point, showing that the water flowing from down the river came in faster than it went out, and I saw that from personal observation and I am not talking hearsay.

We have been lucky in the last few years. We have a dry cycle that we have had for those few years, and a slight snowfall, but back in the nineties and the early 1900's, when we had a wet cycle, we looked for floods and the floods came periodically, we looked for them, putting in our crops in the Clarks Fork Valley and we had to observe the situation carefully or else we would lose the whole crop. If we had a cold, wet spring, or a poor April, when the snow melted slowly, we had one situation; if we did not we were up against another one. Most of it came from the Flathead branch of the river.

I want to see, certainly, every influence exerted to bring about this particular project because it means—and I am not so much interested in the power end of it; I think it will be a great thing for power and power is needed in Montana and we are extremely interested in flood control and particularly that section of Idaho extending clear across from the falls at Albany down to Newport up the Pend Oreille River to Lake Pend Oreille and around the lake—that is the longest shore line of any lake in the country, and then on up to Clarks Fork River.

There are a few farming sections there.

There are also minerals up there that should require and receive your attention.

I hope this Board will give favorable consideration to the possibility of controlling the floods by the construction of this Hungry Horse project.

I thank you.

Brigadier General ROBINS. Thank you very much.

If there is nothing further, that will conclude the hearing.

(Thereupon the instant hearing was concluded.)

Mr. MURDOCK. We have one more witness to answer a specific question. It is almost time for the House to meet. I wonder if you will take the gavel a moment, Mr. O'Connor, and excuse me.

(Mr. Murdock withdrew from the hearing room and Mr. O'Connor assumed the chair.)

STATEMENT OF GEORGE R. PHILLIPS, SECRETARY'S OFFICE,
DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

Mr. O'CONNOR. Will you give us your name, place of residence, and occupation?

Mr. PHILLIPS. I am George R. Phillips, of the Department of Agriculture, Washington, D. C.

Mr. O'CONNOR. How long have you been with the Department of Agriculture?

Mr. PHILLIPS. Since 1934.

Mr. O'CONNOR. What is your capacity? What is your work?

Mr. PHILLIPS. I am in the Secretary's office, working principally on water policy work.

Mr. O'CONNOR. Have you had occasion to go into the proposal of the dam which is known as Hungry Horse Dam?

Mr. PHILLIPS. It has come to my attention; yes.

Any comment I might make would simply be in elaboration of the report on H. R. 3570 submitted to you by the Secretary of Agriculture.

With regard to the land involved in the reservoir site: As pointed out in the Secretary's report, some 16,000 acres of national-forest land might be inundated if the dam were constructed to the level suggested by the Federal Power Commission. Some 6,000 acres of that land is now covered only with small trees—what the foresters call reproduction growth. That is what you gentlemen have been referring to as burned over. Considerable merchantable timber now stands on the remaining land, estimated at 93,000,000 board-feet in total. The appraised value of it is given in the Secretary's report. I believe it is about \$274,000. This timber could be harvested and fed into the market or stock piled at such time as it became desirable to clear the site and construct the dam.

Mr. O'CONNOR. That would not be a loss?

Mr. PHILLIPS. No. There is a large area of national forest land upstream from the Hungry Horse Dam site which can now be reached only by way of roads and telephone lines which go up the valley.

Mr. HORAN. The construction of this dam would provide navigation up to those reaches, would it?

Mr. PHILLIPS. I do not think it would provide navigation.

Mr. HORAN. I mean lake navigation.

Mr. PHILLIPS. Yes; except that in order to continue to protect this area from fire—

Mr. O'CONNOR. Elaborate on that a little bit, please.

Mr. PHILLIPS. I say, in order to protect this upstream area from fire and in order to enable it to continue to grow timber, which is so important to the economic life of the region, and to make its recreational opportunities available to the public—including the fishing which Senator Wheeler spoke about the other day—it would be necessary that access roads and telephone lines be constructed on each side of the reservoir.

It would also be necessary to construct certain administrative buildings that would serve this upper area. The Department feels that provision should be made, in connection with any favorable consideration that may be given the bill, for replacement of these protection and use facilities.

In other words, you are only going to flood 16,000 acres that would be in the reservoir site, but in doing that you would close about a million acres above there unless new roads and telephone lines are constructed. They can be reached by roads and telephone lines at a higher level and then they can be managed just as though the dam were not there.

The new information brought into the picture last Tuesday by Mr. Warne, about use of water which might be stored by a dam at Hungry Horse, makes the proposed dam of even greater significance than formerly, from the standpoint of providing irrigation water to the lands above Flathead Lake, unless an alternate, more economical means of providing storage for available water can be provided.

Mr. O'CONNOR. As a matter of fact, would not a reservoir placed there help, as far as fire hazard is concerned? Would not that be the effect?

Mr. PHILLIPS. It is a little doubtful. On the other hand, it would constitute a fire line in one place.

Mr. O'CONNOR. That is your statement in addition to the report of the Department?

Mr. PHILLIPS. Yes.

Mr. O'CONNOR. You are really in favor of the passage of this bill, are you not?

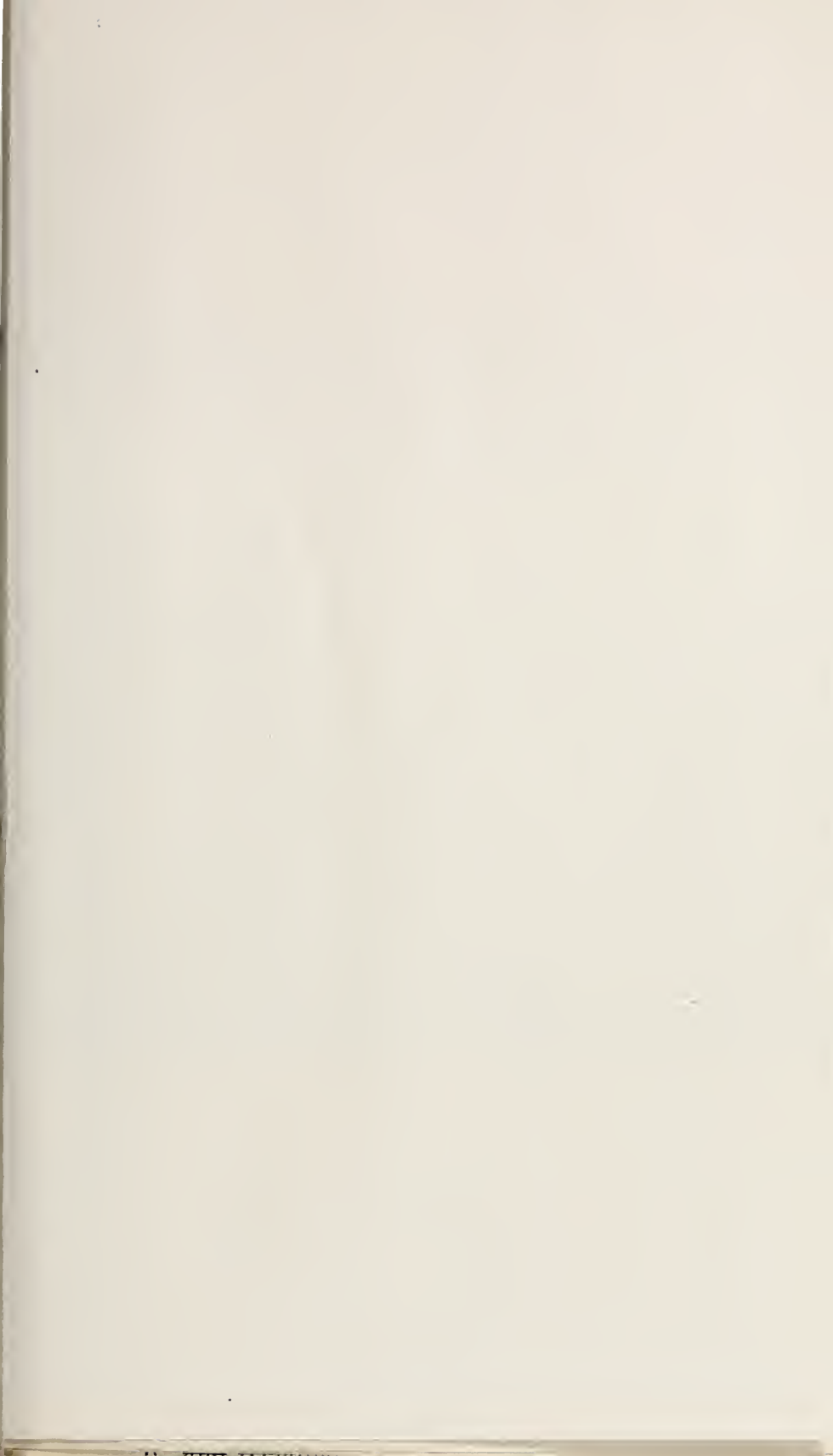
Mr. PHILLIPS. We have no objection to it.

Mr. O'CONNOR. Are you really in favor of it?

Mr. PHILLIPS. I have to stick by the Secretary's report.

Mr. O'CONNOR. Without objection, the committee stands adjourned until tomorrow morning at 10:30.

(Whereupon, at 11:55 a. m., the committee adjourned until tomorrow, Friday, February 4, 1944, at 10:30 a. m.)





HUNGRY HORSE DAM

FRIDAY, FEBRUARY 4, 1944

HOUSE OF REPRESENTATIVES,
COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C.

The committee met at 10:30 a. m., Hon. Compton I. White (chairman) presiding.

The CHAIRMAN. The committee will be in order. This meeting was called for further consideration of H. R. 3570—

to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

We have here the Report of the Northwest States Development Association of December 17, 1943. This association comprises the Governors of the five Northwest States Association—Oregon, Idaho, Washington, Montana, and Wyoming—together with two additional members from each of the States, including the State engineers. They have made a very careful study of the various projects in the Northwest, availing themselves of all information from the governmental departments, State and private sources, and are recommending for immediate, or early post-war, construction only such projects as are urgently necessary and self-liquidating, which means that the Government will be entirely reimbursed and that there will be no charge against taxpayers of the United States for such construction.

The Hungry Horse project is listed by them as an emergency project of immediate necessity and as self-liquidating. The evidence that has been submitted before this committee confirms their report.

The land to be inundated by the reservoir site is entirely within the national forest, has no agricultural value, and a very limited value for the future production of timber, as evidenced by the statement from the Department of Agriculture, which places the value of only \$73,000 on the land for the purpose of growing new timber. The evidence further shows that this comprises chiefly burnt-over land and that the timber has little commercial value. The Department of Agriculture estimates that value at \$274,000, but that does not mean a loss, since this timber can be cut and salvaged at the time the reservoir site is cleared and either sold to the sawmills in the vicinity or stockpiled for future sale. Its proximity to the railroad—approximately 4 miles—and the present demand for lumber assure ready marketability at maximum prices.

I would like to suggest to the authors of H. R. 3570 that it might be advisable to amend their bill so as to be more in conformity with the policy of the Department of the Interior, and more particularly, that branch of the Department, the Bureau of Reclamation, which will

undoubtedly be called upon to construct the project in the event it is approved by the Congress and the Government departments.

There is one other item that should be given consideration. Certain facilities of the United States Forest Service necessary for the protection and patrolling of the United States forest in that area—such as trails, roads, shelters, and telephone lines, which would become inundated, would have to be replaced, and I feel that while this is a minor matter, yet in fairness to the Department of Agriculture and the United States Forest Service, I believe provision should be made to replace these facilities.

It is the understanding of the Chair that the testimony on this matter has been heard; that all of the witnesses have been heard. What is the pleasure of the committee?

Mr. O'CONNOR. Mr. Chairman, I should like to have Mr. Mansfield make a statement as to the proposal to finance this project.

Mr. MURDOCK. Mr. Chairman, I was just going to ask that, too; for the benefit of the record, that we might have the case well in hand when we go before the House, as I assume we will, with this bill. I should like the gentleman from Montana, the author of the bill, to help us out in that regard.

(Discussion off the record.)

(In this informal discussion, Mr. Miller, Mr. Rockwell, Mr. Lemke, and Mr. Barrett suggested certain amendments, and the chairman again suggested that the bill be amended to conform with amendments as suggested by the Department of the Interior. Mr. Mansfield, author of the bill, agreed to amend the bill to eliminate any objectionable features, and prepared a draft showing how the bill, as amended, would read.)

The CHAIRMAN. The committee will now go into executive session.

(Whereupon the committee went into executive session.)

The CHAIRMAN. Mr. Mansfield, have you prepared a draft showing how this bill, as amended, will read?

Mr. MANSFIELD. Yes, I have it right here. May I say first to the committee that, on the basis of conversations I have had with Mr. Bashore and Mr. Warne, it is their opinion that this will be a quick, self-liquidating project; that they have just about all of their estimates worked out, as to how the cost is going to be repaid, and also that they have in mind the idea of making this a model reclamation project on which to base future projects of this sort.

The bill as amended reads as follows:

That for the purpose of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed as soon as practicable with the construction, operation, and maintenance of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the south fork of the Flathead River, Flathead County, Mont., to such a height as may be necessary to impound not less than one million acre-feet of water.

SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

SEC. 3. The Secretary of the Interior is authorized to construct, operate, and maintain under the provisions of the Federal Reclamation Laws (Act of June 17,

1902, 32 Stat. 388 and acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in such Federal Reclamation Laws; and, within the limits of the water users' repayment ability, such report may be predicted on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal Reclamation Laws.

SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

Mr. ROCKWELL. If this amendment is adopted, I will withdraw my objections to the bill. (Upon motion by Mr. O'Connor, seconded by Mr. Lemke, the amendment was adopted.)

Upon motion of Mr. Lemke, seconded by Mr. Rockwell, the committee voted unanimously to report the bill as amended favorably, and the chairman appointed Mr. Horan to make the report to the House of Representatives.)

(Whereupon the hearings were adjourned.)

(The following matter was submitted for the record:)

DEPARTMENT OF AGRICULTURE,

Washington, February 11, 1944.

HON. MIKE MANSFIELD,

House of Representatives.

DEAR MR. MANSFIELD: We have your letter of January 18 concerning the February 1 hearings before the House Irrigation and Reclamation Committee on H. R. 3570.

On January 22 we forwarded a report on this bill to Congressman Compton I. White that was read at the February 1 hearing at which I understand you were present.

Because of the controlling effect of water on western agricultural production it is especially important that careful consideration be given to its use for this purpose in relation to other possible uses.

At the time we reported on H. R. 3570 it appeared that the principal relationship of the proposed Hungry Horse Dam to irrigation would be the power it might provide for pumping. In the light of testimony at the February 1 hearing by a Department of the Interior representative, based on very recent field information, it appears that a dam at the Hungry Horse site might be utilized to provide storage for irrigation of certain lands at the head of Flathead Lake. This would increase the importance of the proposed structure to the development of agriculture in western Montana unless there is some alternate, more economical means of providing a regulated water supply for those lands.

Sincerely,

GROVER B. HILL, *Assistant Secretary.*

[H. Rept. No. 1193, 78th Cong., 2d sess.]

The Committee on Irrigation and Reclamation, to whom was referred the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

Complete and exhaustive hearings were conducted on this bill. All interested departments of Government were consulted, asked for statements, and invited to attend the hearings.

Official representatives from the State of Montana were in attendance as well as the full congressional delegation from the State of Montana. Evidence was also submitted by the Northwest States Development Association, comprising the Governors of the States of Oregon, Idaho, Washington, Montana, and Wyoming, together with two additional members from each of the five States including the State engineers.

They have made a very careful study of the various projects in the Northwest, availing themselves of all information from governmental departments, State, and private sources, and are recommending for immediate or early post-war construction only such projects as are urgently necessary and self-liquidating, which means that the Government will be entirely reimbursed and that there will be no permanent charge against the taxpayers of the United States for this construction.

We cannot emphasize this self-liquidating feature too strongly.

The bill has been amended in accordance with request of the Department of the Interior in letter included in this report, and also amended to meet objections in original bill in amendments proposed by Mr. Lemke, Mr. Rockwell, Mr. Miller, and Mr. Barrett.

The land to be irrigated is already settled and improved, and much of it under cultivation by dry farming methods. It is authoritatively stated that irrigation will double the production, chiefly in alfalfa for wintering and feeding cattle and sheep on adjacent ranges, and beans and peas, all of which are urgently needed, and none of which is in competition with crops raised in the Middle West.

Montana, the third largest State, has vast natural resources but, because of lack of projects of this kind, the population has steadily declined for the past decade. The power will make it possible to develop their natural resources; the irrigation will produce beef and mutton and other foods urgently needed now, and take care of their increased post-war industrial population resulting from development of their natural resources. Much of their timber is Government-owned, is now ripe and ready to cut and send to the market, otherwise it will rapidly deteriorate.

This is an alternate project for the Flathead Lake project, urged by the Bonneville Power Administration to furnish additional storage of water and thereby increase the firm power at Grand Coulee Dam and Bonneville Dam needed in the war effort. The Flathead project would destroy much valuable cultivated land, part of the city of Kalispell, and close several sawmills and other industries; whereas the Hungry Horse Reservoir is entirely within the national forest; the land to be inundated being burned-over timberland of questionable value for reforestation purposes, and of no value for agricultural purposes. The small amount of merchantable timber remaining can be cut and sold or stock-piled when reservoir site is being cleared, so this will entail no loss. The only possible damages are very trivial, consisting of some forest trails, roads, telephone lines, and shelters now on, or traversing, the reservoir site, and used to guard and patrol the adjoining timberlands in the United States forest reserve.

While this damage is small, when considering a project of this nature, yet in fairness to the Forest Service the committee feels that provision should be made to replace them when Hungry Horse Dam is constructed.

The unanimity of the entire population of Montana, and the representatives of all five of the Northwest States, together with the careful and thorough investigation by the Committee on Irrigation and Reclamation, convinces us that this is a project of unusual merit, benefiting not only the State of Montana, but all down river projects in the four adjoining States, including the privately owned projects, since by storing the surplus waters in the flood seasons and releasing them in the dry seasons of the year, there will be more water for irrigation, less danger of floods, and more firm power developed at all projects between Hungry Horse Dam and the mouth of the Columbia River.

We have made reference to the recommendations of the advisory board of the Bonneville Power Administration, lest the title to this bill should seem incompatible with the reservation made by the Bureau of the Budget.

We have not been advised that this board has changed its mind regarding this danger of power shortage for war industries, and the unusually light snowfall during winter of 1943-44 may increase that danger.

We recommend that this bill be authorized so that in the event this danger does materialize, there will be no delay in getting work under way. If the emergency does not arise, the Hungry Horse Dam will then be in line for early post-war construction.

The amendment is as follows:

Strike out all after the enacting clause and substitute therefor the following: "That for the purpose of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed as soon as practicable with the construction, operation, and maintenance

nance of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Montana, to such a height as may be necessary to impound not less than one million acre-feet of water.

"SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

"SEC. 3. The Secretary of the Interior is authorized to construct, operate, and maintain under the provisions of the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in such Federal Reclamation Laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal Reclamation Laws.

"SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act."

COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C., November 20, 1943.

HON. HAROLD L. ICKES,
Secretary of the Interior, Washington, D. C.

DEAR MR. SECRETARY: We are enclosing a copy of H. R. 3570, relative to the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and would appreciate a statement of your views on the proposed legislation.

Sincerely yours,

COMPTON I. WHITE, M. C.

COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C., January 17, 1944.

HON. HAROLD L. ICKES,
Secretary of the Interior, Washington, D. C.

DEAR MR. SECRETARY: On March 12, 1943, the Bonneville Advisory Board, anticipating a probable hydroelectric power shortage in the Northwest during the low-water season of 1944-45, because of war-emergency requirements, advocated up-river storage at Albeni Falls, Idaho, and Flathead Lake, Mont. This would firm up the power and increase the stream flow during the low-water months, thereby substantially increasing the firm power developed at Grand Coulee and Bonneville Dams.

It was proposed to start emergency construction on these projects on July 1, 1943, but protests by the people of Kalispell that excessive damage would be done to property and lands under cultivation, caused the Bonneville Administration to abandon the Flathead Lake project, and select instead the Hungry Horse Dam site, where the storage reservoir would flood only burned-over and cut-over lands in the forest reserve, and result in minor damage, compared to the benefits to be derived.

To clear the way, so that this project could be partially constructed for storage purposes, H. R. 3570 has been introduced by Congressman Mansfield of Montana. As we understand it, this partial construction will require only a limited amount of strategic material and manpower, and is justified on the grounds that when the war in the Pacific is intensified, the power demands will increase. Of course, in the post-war period, when this dam is completed, it will be a multiple-purpose project, combining power, irrigation, and flood control along with storage, but at present only storage facilities are planned.

The people of Kalispell, Mont., fear that until H. R. 3570 becomes law, there will always be the danger, should an emergency arise, to return to the original Flathead Lake project. They are, therefore, insistent that our committee hold hearings on H. R. 3570, and we have set February 1, 1944, as the date for such hearings.

We will appreciate a statement from your Department regarding this proposed legislation at your earliest convenience.

Sincerely yours,

COMPTON I. WHITE, M. C.

DEPARTMENT OF THE INTERIOR,
Washington, February 19, 1944.

HON. COMPTON I. WHITE,

*Chairman, Committee on Irrigation and Reclamation,
House of Representatives.*

MY DEAR MR. WHITE: You have asked for an expression of my views regarding H. R. 3570, entitled "A bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes."

I recommend that this proposed legislation be enacted after being amended in the following particulars:

(a) By deleting lines 3 to 8, inclusive, on page 1 of the bill, and inserting in lieu thereof the following: "That for the purpose of irrigation and reclamation of arid lands; for controlling floods, improving navigation, and regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses, primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to";

(b) By deleting the word "immediately" in line 9, on page 1, and substituting "as soon as practicable";

(c) By inserting a comma after the word "construction", in line 9, on page 1 of the bill, together with the following: "operation and maintenance";

(d) By deleting the word "immediately" in line 4, page 2;

(e) By substituting the phrase "not less than" for the word "approximately" in line 4, on page 2;

(f) By deleting all of section 2, following the word "reservoir" in line 9, on page 2, and by substituting therefor "of the maximum usable and feasible capacity";

(g) By adding a new section 3, reading as follows:

"SEC. 3. The Secretary of the Interior is authorized to construct, operate and maintain under the provisions of the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in said Federal Reclamation Laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal Reclamation Laws."

(h) Section 3 of the bill would then become section 4.

This proposed project has been viewed in the light of comprehensive, long-range plans for the multiple-purpose development of the Columbia River Basin which for some years have been urged by the Bonneville Advisory Board, the Corps of Engineers, the Bureau of Reclamation and other Federal agencies and more recently by the newly organized Pacific Northwest Development Association. These plans, formulated with due consideration of the need of and benefits from navigation, flood control, irrigation, and land development and power founded upon investigations of wide scope, provide a basis for the improvement and stabilization of the economies of various parts of the region as well as the Northwest as a whole. The foregoing recommendation is accordingly predicated both upon an analysis of these plans for post-war development and upon presently indicated wartime needs. Furthermore, it is predicated upon the position that, while an over-all study of the Columbia Basin should be made, emergency projects should, nevertheless, be undertaken without waiting for the over-all study, particularly where such projects are integral parts of any comprehensive plan and will benefit downstream developments.

The Hungry Horse project would be located some 4 miles above the confluence of the South Fork and the Flathead River, in turn a tributary of the Clark Fork of the Columbia. The Clark Fork, because of its large discharge, its high elevation in the Columbia River system, and its point of discharge into the main

Columbia above the international boundary and above all of the dams of the comprehensive development plan for the main stem of the Columbia, is the most strategic and important tributary of the Columbia from the standpoint of river regulation and effective use of its water resources. The Hungry Horse project is one of the major features of the comprehensive plan as it relates to the Clark Fork. It is a logical and significant unit in the over-all development program. It is a part of the basic program recommended by the State of Montana and has very wide and strong support throughout that State. Any region-wide basic program for water and land development will be seriously weakened by omission of a project of its key character in the drainage basin scheme and in the regional economy.

The power output of the Columbia River may be increased either by the installation of additional dams and power plants on the river, or by the development of upstream water storage, or by a combination of these means. The combined method—a concurrent and integrated development of river installations and of upstream projects for storage and other economic purposes—is desirable.

Upstream storage development permits the repeated use of water for multiple purposes. It provides for needed water and land development in headwater areas. It distributes the work and the long-term benefits of drainage basin development. It provides advantages not otherwise available to upstream and interior States and areas. It is in accord with the logical policy of basin-wide physical and economic development, and not merely one looking toward the most efficient use of all water resources from an engineering standpoint.

The water storage provided by the Hungry Horse Reservoir would be a logical part of any plan and program for the general development of water-storage capacity and improved regulation of the Columbia River system. The reservoir would be located in a valley, with little damage to forest areas and practically none to other land, agricultural, and community resources. The reservoir would lie above developed areas and potential agricultural land development areas in the Flathead and Clark Fork Valleys. Use of the reservoir will have major values in power production, minor values in the improvement of navigation downstream and in flood protection for the upper Flathead and Pend Oreille Valleys, and potential values with respect to ultimate full irrigation uses of water.

From a power viewpoint, water storage of 1,500,000 acre-feet will make a most significant contribution in the form of incidental downstream benefits. It is estimated that the firm power capacities of existing downstream power plants at Polson, Thompson Falls, Grand Coulee, Rock Island, and Bonneville will be increased to the extent of some 78,000 kilowatts. When the increase in the firm power capacities of the power plants likely to be installed downstream as a part of the contemplated post-war development is also taken into account, the total increase in firm power capacity directly attributable to the Hungry Horse project will be about 284,000 kilowatts.

The project is considered economically feasible, subject to the insurance or development of its power market. Power installations should be made in advance of a promising market. Availability of power at suitable volume and low cost is essential to the development of latent resources of industries and communities, which provide the market for power and thus close the circle. Since the area that will be served with the power that eventually will be developed at the project is plainly a part of the Columbia River Basin and thus a part of the Columbia River power market, it follows that the Bonneville Power Administration in the Department of the Interior is the agency which should market such power as may be generated at the Hungry Horse project. In this manner the project can be integrated with the other Federal power developments in the basin and abundant low-cost electric power can be made available throughout in the area, including western Montana.

In connection with a similar report on a companion bill, S. 1496, I have been advised by the Bureau of the Budget that "while there would be no objection by this office to the presentation of your proposed report on the bill, it is not believed that this project could be satisfactorily justified as an emergency war project, and that, since the President has given approval to the current construction of public works only when they are essential to the war effort, the enactment of the bill, S. 1496, should not be considered to be in accord with the President's program."

Sincerely yours,

ABE FORTAS,

Acting Secretary of the Interior.

X



PROVIDING FOR CONSTRUCTION OF HUNGRY HORSE
DAM ON SOUTH FORK OF FLATHEAD RIVER IN STATE
OF MONTANA

FEBRUARY 24, 1944.—Committed to the Committee of the Whole House on the
state of the Union and ordered to be printed

Mr. HORAN, from the Committee on Irrigation and Reclamation,
submitted the following

REPORT

[To accompany H. R. 3570]

The Committee on Irrigation and Reclamation, to whom was referred the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

Complete and exhaustive hearings were conducted on this bill. All interested departments of Government were consulted, asked for statements, and invited to attend the hearings.

Official representatives from the State of Montana were in attendance as well as the full congressional delegation from the State of Montana. Evidence was also submitted by the Northwest States Development Association, comprising the Governors of the States of Oregon, Idaho, Washington, Montana, and Wyoming, together with two additional members from each of the five States including the State engineers.

They have made a very careful study of the various projects in the Northwest, availing themselves of all information from governmental departments, State, and private sources, and are recommending for immediate or early post-war construction only such projects as are urgently necessary and self-liquidating, which means that the Government will be entirely reimbursed and that there will be no permanent charge against the taxpayers of the United States for this construction.

We cannot emphasize this self-liquidating feature too strongly.

The bill has been amended in accordance with request of the Department of the Interior in letter included in this report, and also amended to meet objections in original bill in amendments proposed by Mr. Lemke, Mr. Rockwell, Mr. Miller, and Mr. Barrett.

The land to be irrigated is already settled and improved, and much of it under cultivation by dry farming methods. It is authoritatively stated that irrigation will double the production, chiefly in alfalfa for wintering and feeding cattle and sheep on adjacent ranges, and beans and peas, all of which are urgently needed, and none of which is in competition with crops raised in the Middle West.

Montana, the third largest State, has vast natural resources but, because of lack of projects of this kind, the population has steadily declined for the past decade. The power will make it possible to develop their natural resources; the irrigation will produce beef and mutton and other foods urgently needed now, and take care of their increased post-war industrial population resulting from development of their natural resources. Much of their timber is Government-owned, is now ripe and ready to cut and send to the market, otherwise it will rapidly deteriorate.

This is an alternate project for the Flathead Lake project, urged by the Bonneville Power Administration to furnish additional storage of water and thereby increase the firm power at Grand Coulee Dam and Bonneville Dam needed in the war effort. The Flathead project would destroy much valuable cultivated land, part of the city of Kalispell, and close several sawmills and other industries; whereas the Hungry Horse Reservoir is entirely within the national forest; the land to be inundated being burned-over timberland of questionable value for reforestation purposes, and of no value for agricultural purposes. The small amount of merchantable timber remaining can be cut and sold or stock-piled when reservoir site is being cleared, so this will entail no loss. The only possible damages are very trivial, consisting of some forest trails, roads, telephone lines, and shelters now on, or traversing, the reservoir site, and used to guard and patrol the adjoining timberlands in the United States forest reserve.

While this damage is small, when considering a project of this nature, yet in fairness to the Forest Service the committee feels that provision should be made to replace them when Hungry Horse Dam is constructed.

The unanimity of the entire population of Montana, and the representatives of all five of the Northwest States, together with the careful and thorough investigation by the Committee on Irrigation and Reclamation, convinces us that this is a project of unusual merit, benefiting not only the State of Montana, but all down river projects in the four adjoining States, including the privately owned projects, since by storing the surplus waters in the flood seasons and releasing them in the dry seasons of the year, there will be more water for irrigation, less danger of floods, and more firm power developed at all projects between Hungry Horse Dam and the mouth of the Columbia River.

We have made reference to the recommendations of the advisory board of the Bonneville Power Administration, lest the title to this bill should seem incompatible with the reservation made by the Bureau of the Budget.

We have not been advised that this board has changed its mind regarding this danger of power shortage for war industries, and the unusually light snowfall during winter of 1943-44 may increase that danger.

We recommend that this bill be authorized so that in the event this danger does materialize, there will be no delay in getting work under way. If the emergency does not arise, the Hungry Horse Dam will then be in line for early post-war construction.

The amendment is as follows:

Strike out all after the enacting clause and substitute therefor the following:

That for the purpose of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed as soon as practicable with the construction, operation, and maintenance of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Montana, to such a height as may be necessary to impound not less than one million acre-feet of water.

SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

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SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C., November 20, 1943.

HON. HAROLD L. ICKES,
Secretary of the Interior, Washington, D. C.

DEAR MR. SECRETARY: We are enclosing a copy of H. R. 3570, relative to the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and would appreciate a statement of your views on the proposed legislation.

Sincerely yours,

COMPTON I. WHITE, M. C.

COMMITTEE ON IRRIGATION AND RECLAMATION,
Washington, D. C., January 17, 1944.

HON. HAROLD L. ICKES,
Secretary of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: On March 12, 1943, the Bonneville Advisory Board, anticipating a probable hydroelectric power shortage in the Northwest during the low-water season of 1944-45, because of war-emergency requirements, advocated up-river storage at Albeni Falls, Idaho, and Flathead Lake, Mont. This would firm up the power and increase the stream flow during the low-water months, thereby substantially increasing the firm power developed at Grand Coulee and Bonneville Dams.

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To clear the way, so that this project could be partially constructed for storage purposes, H. R. 3570 has been introduced by Congressman Mansfield of Montana. As we understand it, this partial construction will require only a limited amount of strategic material and manpower, and is justified on the grounds that when the war in the Pacific is intensified, the power demands will increase. Of course, in the post-war period, when this dam is completed, it will be a multiple-purpose project, combining power, irrigation, and flood control along with storage, but at present only storage facilities are planned.

The people of Kalispell, Mont., fear that until H. R. 3570 becomes law, there will always be the danger, should an emergency arise, to return to the original Flathead Lake project. They are, therefore, insistent that our committee hold hearings on H. R. 3570, and we have set February 1, 1944, as the date for such hearings.

We will appreciate a statement from your Department regarding this proposed legislation at your earliest convenience.

Sincerely yours,

COMPTON I. WHITE, M. C.

DEPARTMENT OF THE INTERIOR,
Washington, February 19, 1944.

HON. COMPTON I. WHITE,
*Chairman, Committee on Irrigation and Reclamation,
House of Representatives.*

MY DEAR MR. WHITE: You have asked for an expression of my views regarding H. R. 3570, entitled "A bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes."

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(b) By deleting the word "immediately" in line 9, on page 1, and substituting "as soon as practicable";

(c) By inserting a comma after the word "construction", in line 9, on page 1 of the bill, together with the following: "operation and maintenance";

(d) By deleting the word "immediately" in line 4, page 2;

(e) By substituting the phrase "not less than" for the word "approximately" in line 4, on page 2;

(f) By deleting all of section 2, following the word "reservoir" in line 9, on page 2, and by substituting therefor "of the maximum usable and feasible capacity";

(g) By adding a new section 3, reading as follows:

"Sec. 3. The Secretary of the Interior is authorized to construct, operate and maintain under the provisions of the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in said Federal Reclamation Laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal Reclamation Laws."

(h) Section 3 of the bill would then become section 4.

This proposed project has been viewed in the light of comprehensive, long-range plans for the multiple-purpose development of the Columbia River Basin which for some years have been urged by the Bonneville Advisory Board, the Corps of Engineers, the Bureau of Reclamation and other Federal agencies and more recently by the newly organized Pacific Northwest Development Association. These plans, formulated with due consideration of the need of and benefits from navigation, flood control, irrigation, and land development and power founded upon investigations of wide scope, provide a basis for the improvement and stabilization of the economies of various parts of the region as well as the Northwest as a whole. The foregoing recommendation is accordingly predicated both upon an analysis of these plans for post-war development and upon presently indicated wartime needs. Furthermore, it is predicated upon the position that, while an over-all study of the Columbia Basin should be made, emergency projects should, nevertheless, be undertaken without waiting for the over-all study, particularly where such projects are integral parts of any comprehensive plan and will benefit downstream developments.

The Hungry Horse project would be located some 4 miles above the confluence of the South Fork and the Flathead River, in turn a tributary of the Clark Fork of the Columbia. The Clark Fork, because of its large discharge, its high elevation in the Columbia River system, and its point of discharge into the main Columbia above the international boundary and above all of the dams of the comprehensive development plan for the main stem of the Columbia, is the most strategic and important tributary of the Columbia from the standpoint of river regulation and effective use of its water resources. The Hungry Horse project is one of the major features of the comprehensive plan as it relates to the Clark Fork. It is a logical and significant unit in the over-all development program. It is a part of the basic program recommended by the State of Montana and has very wide and strong support throughout that State. Any region-wide basic program for water and land development will be seriously weakened by omission of a project of its key character in the drainage basin scheme and in the regional economy.

The power output of the Columbia River may be increased either by the installation of additional dams and power plants on the river, or by the development of upstream water storage, or by a combination of these means. The combined method—a concurrent and integrated development of river installations and of upstream projects for storage and other economic purposes—is desirable.

Upstream storage development permits the repeated use of water for multiple purposes. It provides for needed water and land development in headwater areas. It distributes the work and the long-term benefits of drainage basin development. It provides advantages not otherwise available to upstream and interior States and areas. It is in accord with the logical policy of basin-wide physical and economic development, and not merely one looking toward the most efficient use of all water resources from an engineering standpoint.

The water storage provided by the Hungry Horse Reservoir would be a logical part of any plan and program for the general development of water-storage capacity and improved regulation of the Columbia River system. The reservoir would be located in a valley, with little damage to forest areas and practically none to other land, agricultural, and community resources. The reservoir would lie above developed areas and potential agricultural land development areas in the Flathead and Clark Fork Valleys. Use of the reservoir will have major values in power production, minor values in the improvement of navigation downstream and in flood protection for the upper Flathead and Pend'Oreille Valleys, and potential values with respect to ultimate full irrigation uses of water.

From a power viewpoint, water storage of 1,500,000 acre-feet will make a most significant contribution in the form of incidental downstream benefits. It is estimated that the firm power capacities of existing downstream power plants at Polson, Thompson Falls, Grand Coulee, Rock Island, and Bonneville will be increased to the extent of some 78,000 kilowatts. When the increase in the firm power capacities of the power plants likely to be installed downstream as a part of the contemplated post-war development is also taken into account, the total increase in firm power capacity directly attributable to the Hungry Horse project will be about 284,000 kilowatts.

The project is considered economically feasible, subject to the insurance or development of its power market. Power installations should be made in advance of a promising market. Availability of power at suitable volume and low cost is essential to the development of latent resources of industries and

communities, which provide the market for power and thus close the circle. Since the area that will be served with the power that eventually will be developed at the project is plainly a part of the Columbia River Basin and thus a part of the Columbia River power market, it follows that the Bonneville Power Administration in the Department of the Interior is the agency which should market such power as may be generated at the Hungry Horse project. In this manner the project can be integrated with the other Federal power developments in the basin and abundant low-cost electric power can be made available throughout the area, including western Montana.

In connection with a similar report on a companion bill, S. 1496, I have been advised by the Bureau of the Budget that "while there would be no objection by this office to the presentation of your proposed report on the bill, it is not believed that this project could be satisfactorily justified as an emergency war project, and that, since the President has given approval to the current construction of public works only when they are essential to the war effort, the enactment of the bill, S. 1496, should not be considered to be in accord with the President's program."

Sincerely yours,

ABE FORTAS,
Acting Secretary of the Interior.





H. R. 3570

[Report No. 1193]

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 1, 1943

Mr. MANSFIELD of Montana introduced the following bill; which was referred to the Committee on Irrigation and Reclamation

FEBRUARY 24, 1944

Reported with an amendment, committed to the Committee of the Whole House on the state of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That for the purpose of providing additional storage for water
4 which shall be used for (1) the generation of electric energy
5 urgently needed for the war effort, and (2) the irrigation
6 and reclamation of arid lands, and other beneficial uses, pri-
7 marily in the State of Montana but also in down-stream areas,
8 the Secretary of the Interior is authorized and directed to

1 proceed immediately with the construction of the proposed
2 Hungry Horse Dam (including facilities for generating elec-
3 tric energy) on the South Fork of the Flathead River, Flat-
4 head County, Montana, to such a height as may be necessary
5 to impound immediately approximately one million acre-
6 feet of water.

7 SEC. 2. The Secretary of the Interior is authorized to
8 complete, as soon as the necessary additional material is avail-
9 able, the construction of the Hungry Horse Dam so as to
10 provide a storage reservoir with an ultimate capacity of ap-
11 proximately one million, five hundred thousand acre-feet of
12 water.

13 SEC. 3. There are authorized to be appropriated such
14 sums as may be necessary to carry out the purposes of this
15 Act.

16 *That for the purpose of irrigation and reclamation of arid*
17 *lands, for controlling floods, improving navigation, regulating*
18 *the flow of the South Fork of the Flathead River, for*
19 *the generation of electric energy urgently needed for the*
20 *war effort, and for other beneficial uses primarily in the*
21 *State of Montana but also in downstream areas, the Sec-*
22 *retary of the Interior is authorized and directed to proceed*
23 *as soon as practicable with the construction, operation, and*
24 *maintenance of the proposed Hungry Horse Dam (including*
25 *facilities for generating electric energy) on the South Fork*

1 of the Flathead River, Flathead County, Montana, to such
2 a height as may be necessary to impound not less than one
3 million acre-feet of water.

4 *SEC. 2. The Secretary of the Interior is authorized to*
5 *complete, as soon as the necessary additional material is*
6 *available, the construction of the Hungry Horse Dam so*
7 *as to provide a storage reservoir of the maximum usable and*
8 *feasible capacity.*

9 *SEC. 3. The Secretary of the Interior is authorized to*
10 *construct, operate, and maintain under the provisions of the*
11 *Federal reclamation laws (Act of June 17, 1902, 32 Stat.*
12 *388 and Acts amendatory thereof or supplementary thereto),*
13 *such additional works as he may deem necessary for irriga-*
14 *tion purposes. Such irrigation works may be undertaken only*
15 *after a report and findings thereon have been made by the Sec-*
16 *retary of the Interior as provided in such Federal reclamation*
17 *laws; and, within the limits of the water users' repayment*
18 *ability, such report may be predicated on allocation to irriga-*
19 *tion of an appropriate portion of the cost of constructing said*
20 *dam and reservoir. Said dam and reservoir and said irriga-*
21 *tion works may be utilized for irrigation purposes only*
22 *pursuant to the provisions of said Federal reclamation laws.*

23 *SEC. 4. There are authorized to be appropriated such*
24 *sums as may be necessary to carry out the purposes of this*
25 *Act.*

[Report No. 1193]

A BILL

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

By Mr. MANSFIELD of Montana

NOVEMBER 1, 1943

Referred to the Committee on Irrigation and Reclamation

FEBRUARY 24, 1944

Reported with an amendment, committed to the Committee of the Whole House on the state of the Union, and ordered to be printed



United States
of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 78th CONGRESS, SECOND SESSION

Vol. 90

WASHINGTON, THURSDAY, MARCH 23, 1944

No. 54

Senate

The Senate was not in session today. Its next meeting will be held on Friday, March 24, 1944, at 12 o'clock meridian.

House of Representatives

THURSDAY, MARCH 23, 1944

The House met at 12 o'clock noon.

The Chaplain, Rev. James Shera Montgomery, D. D., offered the following prayer:

O patient Father, we pray Thee to ever hold us to the endless truth that he who is willing to lose his life for the sake of some good cause, some duty, some benevolence, shall find it in everlasting remembrance; the workman dies but the work goes on forever. We would register in our hearts the example of the poor widow with her mite and Mary at Bethany. Let us do cheerfully that for which we cannot be paid; Thy recompense transcends all gains of earthly rewards.

In this mistaken world, O God, men have fallen into wrong and wicked paths; teach us self-forgetfulness that we may turn aside from the outward things that perish and reach for that which is an eternal reality. Blessed Lord, let us not allow the millions of Thy children be caught by the undertow of the wild seas of hate and revenge, and those whose homes are devastated by the mad torrents of destruction. Oh, may America glorify our Saviour's name by her sacrificial toil and pity for the nations that are living in dismay and terror, in hunger and darkness, deep and thick. Bring all to that glorious day of prediction when peace shall reign and the earth shall see Thy salvation. In the name of Jesus Christ, St. Mary's Holy Child. Amen.

THE JOURNAL

The Journal of the proceedings of yesterday was read and approved.

MESSAGE FROM THE SENATE

A message from the Senate, by Mr. Gatling, one of its clerks, announced that the Senate had passed a bill of the following title, in which the concurrence of the House is requested:

S. 1029. An act to provide for regulation of certain insurance rates in the District of Columbia, and for other purposes.

The message also announced that the Senate agrees to the amendments of the House to a bill of the Senate of the following title:

S. 250. An act to promote sustained-yield forest management in order thereby (a) to stabilize communities, forest industries, employment, and taxable forest wealth; (b) to assure a continuous and ample supply of forest products; and (c) to secure the benefits of forests in regulation of water supply and stream flow, prevention of soil erosion, amelioration of climate, and preservation of wildlife.

CHARLES P. KEYSER

Mr. COCHRAN. Mr. Speaker, I ask unanimous consent to address the House for 1 minute.

The SPEAKER. Is there objection to the request of the gentleman from Missouri?

There was no objection.

Mr. COCHRAN. Mr. Speaker, today there is a vacant chair in the press gallery. Charles Phillip Keyser, who has been a familiar figure among Washington newspapermen since the turn of the century, died at his home in Washington Tuesday evening and is being buried this afternoon.

Charlie Keyser as we knew him entered the newspaper field at Mount Sterling, Ill., where he was born, became city editor of a Peoria, Ill., paper, and then joined the staff of the St. Louis Globe-Democrat. He was political reporter and covered the Legislatures of Missouri and Illinois for this outstanding newspaper, and then was transferred to Washington. He started his career here during the term of President McKinley in charge of the Washington bureau of the Globe-Democrat. He was known throughout the Nation among the lead-

ers of both parties and was always on duty at the press table at national conventions. Mr. Keyser was a very active member of the Gridiron Club, the White House Correspondents' Association, and was one of the organizers of the National Press Club. While he was rather inactive for the last 2 years, he remained a contributing editor to the newspaper that he had served so long. It was my privilege to be able to call him my close personal friend. He was devoted to his country and was a writer of the old school. An outstanding journalist has passed away. He was a credit to his profession. He was known for his fairness and possessed a personality that made him friends with all he came in contact with. I think some of the happiest days of his life were when he was preparing for the annual Gridiron dinners. He helped to write the skits as well as take an active part with other members of the club during those famous dinners. He leaves a devoted wife and two children. Mrs. Keyser, ever since she came to Washington, has been extremely active among civic organizations, especially those that assist unfortunate people. They have lost a devoted husband and father, and I a close personal friend, and I am sure all his friends join me in extending sympathy to his family in their hour of sorrow.

Mr. CANNON of Missouri. Mr. Speaker, I ask unanimous consent to address the House for 1 minute and revise and extend my remarks.

[Mr. CANNON of Missouri addressed the House. His remarks will appear hereafter in the Appendix.]

CORRECTION OF ROLL CALL

Mr. COURTNEY. Mr. Speaker, on roll call No. 47 I am recorded as being absent. I was present and answered to

my name. I ask unanimous consent that the *RECORD* and *Journal* be corrected accordingly.

The **SPEAKER**. Is there objection to the request of the gentleman from Tennessee?

There was no objection.

LIGHTERAGE AT PORT OF NEWARK

Mr. **CELLER**. Mr. Speaker, I ask unanimous consent to address the House for 1 minute.

The **SPEAKER**. Is there objection to the request of the gentleman from New York?

There was no objection.

Mr. **CELLER**. Mr. Speaker, the day before yesterday I made complaint concerning conditions in New York Harbor with reference to the monopoly of the lighterage business out of the port of Newark that had been set up by the administrative office of the port of Newark. Major General Farthing, officer in charge at the port of Newark, apparently as a result of my admonition, has advised that the situation is now remedied. I am informed that the work of lighterage in New York Harbor emanating from the port of Newark will now be divided, so that we shall no longer have a monopoly of that business. This indicates the value of Members of Congress pointing out irregularities when they meet with them and having courage enough to come into the well of the House and point them out and give publicity thereto. I am sure Major General Farthing, who is an exemplary officer, for whom I have the highest respect, has seen wisdom in this regard and will make—what I said the other day—a good record of administration in the port of Newark an even better one.

EXTENSION OF REMARKS

Mr. **PHILBIN**. Mr. Speaker, I ask unanimous consent to extend my own remarks in the *RECORD* and include therein an article from the Worcester Telegram.

The **SPEAKER**. Is there objection to the request of the gentleman from Massachusetts?

There was no objection.

[The matter referred to appears in the Appendix.]

INDEPENDENCE OF SMALL NATIONS

Mr. **PHILBIN**. Mr. Speaker, I ask unanimous consent to address the House for 1 minute and to revise and extend my remarks.

The **SPEAKER**. Is there objection to the request of the gentleman from Massachusetts?

There was no objection.

[Mr. **PHILBIN** addressed the House. His remarks appear in the Appendix of today's *RECORD*.]

PAPER SHORTAGE

Mr. **ROWE**. Mr. Speaker, I ask unanimous consent to address the House for 1 minute.

The **SPEAKER**. Is there objection to the request of the gentleman from Ohio?

There was no objection.

Mr. **ROWE**. Mr. Speaker, I note the shrinking size of newspapers from time

to time and have heard much concerning the shortage of paper.

I would like to call to the attention of the House an item appearing in a bulletin issued on March 15, 1944, entitled "Sale of Surplus Stocks and Salvage," as follows:

The Jersey City Quartermaster Repair Subdepot, 125 West End Avenue, New York, N. Y. Paper items—Bid S-55, March 28: Sale of waste materials: Obsolete printed forms, 57 tons white ledger and manila paper, in cartons, located in New York City.

STEPHEN RAUSHENBUSH

Mr. **DONDERO**. Mr. Speaker, I ask unanimous consent to address the House for 1 minute.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

[Mr. **DONDERO** addressed the House. His remarks appear in the Appendix of today's *RECORD*.]

HOSPITALS AND NURSING

Mr. **RAMEY**. Mr. Speaker, I ask unanimous consent to address the House for 1 minute.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

Mr. **RAMEY**. Mr. Speaker, gratitude is expressed from the Ninth District of Ohio through its representative in Congress to the departments who have been unusually kind in regard to the hospital housing for the nurses. For a number of weeks and months St. Vincent and Mercy Hospital have been without the proper room for the nurses and we have just been accommodated by the departments. I wish to express my gratitude to Miss De Shetler, who came from Toledo and has spent several days here in field work, as well as to the Sisters of Mercy, to Sister Farley and to Dr. Wagner. When folks cooperate I think we should express our gratitude.

PERMISSION TO ADDRESS THE HOUSE

Mr. **STEARNS** of New Hampshire. Mr. Speaker, I ask unanimous consent that on tomorrow, Friday, after the completion of the legislative business and any other special orders heretofore entered, I be permitted to address the House for 20 minutes.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

EXTENSION OF REMARKS

Mr. **WARD JOHNSON**. Mr. Speaker, I ask unanimous consent to extend my remarks and to include an article entitled "When Johnnie Comes Marching Home."

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

[The matter referred to appears in the Appendix.]

Mr. **ANDERSON** of California. Mr. Speaker, I ask unanimous consent to revise and extend the remarks which I expect to make in the Committee of the Whole today and to include therewith certain letters and other data.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

Mr. **CANFIELD**. Mr. Speaker, I ask unanimous consent to extend and revise my remarks in the *RECORD* and include a letter from Mr. H. Earl Propst, of the United States Department of Agriculture, on farm problems.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

[The matter referred to appears in the Appendix.]

Mr. **BREHM**. Mr. Speaker, I ask unanimous consent to extend my remarks in the *RECORD* on future peace.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

[The matter referred to appears in the Appendix.]

PERMISSION TO ADDRESS THE HOUSE

Mr. **EBERHARTER**. Mr. Speaker, I ask unanimous consent that on tomorrow, after the completion of the legislative business and any other special orders heretofore entered, I may be permitted to address the House for 15 minutes.

The **SPEAKER**. Without objection, it is so ordered.

There was no objection.

HUNGRY HORSE DAM

Mr. **SABATH**, from the Committee on Rules, submitted the following privileged resolution (H. Res. 481, Rept. No. 1278) on the bill (H. R. 3570) to provide as an emergency war project, for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, which was referred to the House Calendar and ordered to be printed:

Resolved, That immediately upon the adoption of this resolution it shall be in order to move that the House resolve itself into the Committee of the Whole House on the state of the Union for the consideration of the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes. That after general debate, which shall be confined to the bill and shall continue not to exceed 2 hours to be equally divided and controlled by the chairman and the ranking minority member of the Committee on Irrigation and Reclamation, the bill shall be read for amendment under the 5-minute rule. At the conclusion of the reading of the bill for amendment, the Committee shall rise and report the same back to the House with such amendments as shall have been adopted and the previous question shall be considered as ordered on the bill and amendments thereto to final passage without intervening motion except one motion to recommit.

EXPATRIATING PERSONS EVADING MILITARY SERVICE

Mr. **SABATH**, from the Committee on Rules, submitted the following privileged resolution (H. Res. 482, Rept. No. 1279) on the bill (H. R. 4257) to expatriate or exclude certain persons for evading military and naval service, which was

CONSIDERATION OF H. R. 3570

MARCH 23, 1944.—Referred to the House Calendar and ordered to be printed

Mr. SABATH, from the Committee on Rules, submitted the following

REPORT

[To accompany H. Res. 481]

The Committee on Rules, having had under consideration House Resolution 481, report the same to the House with the recommendation that the resolution do pass.





House Calendar No. 212

78TH CONGRESS
2D SESSION

H. RES. 481

[Report No. 1278]

IN THE HOUSE OF REPRESENTATIVES

MARCH 23, 1944

Mr. SABATH, from the Committee on Rules, reported the following resolution;
which was referred to the House Calendar and ordered to be printed

RESOLUTION

1 *Resolved*, That immediately upon the adoption of this
2 resolution it shall be in order to move that the House resolve
3 itself into the Committee of the Whole House on the state
4 of the Union for the consideration of the bill (H. R. 3570)
5 to provide as an emergency war project for the partial con-
6 struction of the Hungry Horse Dam on the South Fork of
7 the Flathead River in the State of Montana, and for other
8 purposes. That after general debate, which shall be confined
9 to the bill and shall continue not to exceed two hours to
10 be equally divided and controlled by the chairman and the
11 ranking minority member of the Committee on Irrigation
12 and Reclamation, the bill shall be read for amendment under

1 the five-minute rule. At the conclusion of the reading of
 2 the bill for amendment, the Committee shall rise and report
 3 the same back to the House with such amendments as shall
 4 have been adopted and the previous question shall be con-
 5 sidered as ordered on the bill and amendments thereto to
 6 final passage without intervening motion except one motion
 7 to recommit.

House Calendar No. 212

78TH CONGRESS
2d Session

H. RES. 481

[Report No. 1278]

RESOLUTION

For the consideration of H. R. 3570, a bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

By Mr. SARATH

MARCH 23, 1944

Referred to the House Calendar and ordered to be printed

produce timber. Another important use of the results is in bringing out the condition of the forest land, and in most cases the need for better forest practice to produce a permanent and increased supply of timber for industry, both of which are basic to community stabilization and regular employment.

I sincerely trust that this resolution will be adopted unanimously.

Mr. RANDOLPH. Mr. Speaker, I ask unanimous consent to extend my remarks in the RECORD on the bill just passed and that they may appear immediately following the statement of the gentleman from Virginia, the chairman of the committee.

The SPEAKER. Is there objection to the request of the gentleman from West Virginia [Mr. RANDOLPH]?

There was no objection.

Mr. BREHM. Mr. Speaker, I ask unanimous consent to extend my own remarks in the RECORD on the bill just passed and that they may follow those of the gentleman from West Virginia [Mr. RANDOLPH].

The SPEAKER. Is there objection to the request of the gentleman from Ohio [Mr. BREHM]?

There was no objection.

HUNGRY HORSE DAM

Mr. SABATH. Mr. Speaker, I call up House Resolution 481, and ask for its immediate consideration.

The Clerk read the resolution, as follows:

Resolved, That immediately upon the adoption of this resolution it shall be in order to move that the House resolve itself into the Committee of the Whole House on the state of the Union for the consideration of the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes. That after general debate, which shall be confined to the bill and shall continue not to exceed 2 hours to be equally divided and controlled by the chairman and the ranking minority member of the Committee on Irrigation and Reclamation, the bill shall be read for amendment under the 5-minute rule. At the conclusion of the reading of the bill for amendment, the Committee shall rise and report the same back to the House with such amendments as shall have been adopted and the previous question shall be considered as ordered on the bill and amendments thereto to final passage without intervening motion except one motion to recommit.

Mr. ROBINSON of Utah. Mr. Speaker, I ask unanimous consent that the bill H. R. 3570, be considered in the House as in Committee of the Whole.

The SPEAKER. Is there objection?

There was no objection.

The Clerk read the bill, as follows:

Be it enacted, etc., That for the purpose of providing additional storage for water which shall be used for (1) the generation of electric energy urgently needed for the war effort, and (2) the irrigation and reclamation of arid lands, and other beneficial uses, primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed immediately with the construction of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Mont., to such a height as may be necessary to im-

pound immediately approximately 1,000,000 acre-feet of water.

SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir with an ultimate capacity of approximately 1,500,000 acre-feet of water.

SEC. 3. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this act.

With the following committee amendment:

Strike out all after the enacting clause and insert: "That for the purpose of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed as soon as practicable with the construction, operation, and maintenance of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Mont., to such a height as may be necessary to impound not less than 1,000,000 acre-feet of water.

"SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

"SEC. 3. The Secretary of the Interior is authorized to construct, operate, and maintain under the provisions of the Federal reclamation laws (act of June 17, 1902, 32 Stat. 388 and acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in such Federal reclamation laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal reclamation laws.

"SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this act."

The committee amendment was agreed to.

Mr. MANSFIELD of Montana. Mr. Speaker, we of Montana owe a great deal to the sterling efforts of Congressmen WHITE, O'CONNOR, HORAN, ROCKWELL, and all the other members of the Irrigation Committee for their untiring efforts in behalf of this proposed legislation.

I rise at this time to speak in behalf of H. R. 3570, a bill to provide for the authorization of the Hungry Horse Dam on the south fork of the Flathead River in northwestern Montana. First, I want to thank the House for the consideration it has shown to me and to the people of my State during the period of grave emergency and great anxiety of last summer when Flathead Lake was threatened and when our security and hopes were at a very low ebb. At that time we were fearful that the Bonneville Administration and the Army engineers would, under the War Powers Act, come in and raise our lake initially 17 feet and by

1946, 37 feet. Because of that the entire Montana delegation—Senators WHEELER and MURRAY, Congressman O'CONNOR, and myself—met with the Bonneville Advisory Commission and urged them not to go ahead with their plan. We were given the assurance that before anything was done meetings to discuss the situation would be held by the Army engineers and the Bonneville Administration with the Montana people. These meetings were held on June 1 and 3, 1943, and I should like to call your attention to the newspaper headlines and clippings regarding them, which I have collected so that you will be able to have some idea as to how this situation affected us.

At the first meeting, held June 1 at Helena, the State capital, Brig. Gen. Warren T. Hannum made the statement that—

Of four proposals for Northwest power development considered, raising of Flathead Lake by 17 feet to provide the needed supplemental storage for Grand Coulee and Bonneville Dams was the only one that was feasible to meet the war emergency.

May I repeat, General Hannum said in effect that the raising of Flathead Lake was the only proposal of four considered that was feasible to meet the war emergency. I further quote from a statement made by the general at the Helena meeting and carried over the U. P. to the effect that—

The survey just completed will be submitted for approval to the Bonneville Power Administration and the War Production Board and after the Secretary of War asks Congress for the appropriation we intend to begin work July 1.

That, as you see, was a pretty bald statement because we were told in Montana that our site was the only feasible one, that there was a war emergency, and that work begin July 1. You can well understand how those words affected the thinking of the people and 2 days later at the public meeting called in Kalispell, Mont., the people showed their feelings in unmistakable terms. These headlines on the chart show how it was felt in the press in various parts of the State.

It is easy for any Member of this House to envisage the situation which arose. Not only was Flathead Lake itself to be raised, which the Army engineers said was necessary to furnish storage for power downstream in Washington and Oregon, but in addition it would have affected the welfare of 25,000 people directly, and 50,000 people indirectly throughout western Montana; it would have destroyed a large lumber industry; it would have brought about the removal from their homes of people who had determined to spend the rest of their lives in the beautiful Flathead Valley; it would have inundated something like 50,000 acres of the best agricultural land in the country; it would have wiped out some towns completely, others partially; and it would have made a stinking morass of the most scenic area in the United States.

At this public meeting, the Flathead County High School auditorium which normally seats 1,500 was crowded to the limit, and it was estimated that 3,200 people were inside the auditorium and a

like number outside taking in the proceedings via loudspeakers. The people came to the meeting determined to do all that they possibly could to stop this despicable plan, and I am afraid that had the attempt to raise Flathead gone through there would have been trouble at that time. If the people of the Flathead country were convinced that the raising of Flathead Lake was a war need they would, I assure you, have given their wholehearted assent to what was necessary. However, they did not believe that such was the case and I agree with them wholeheartedly, because all of us from that part of the country knew that there were other areas such as the Hungry Horse which could be developed which would not have affected the economy of the region as the Flathead Lake proposal would. Montana has never failed in meeting its country's needs.

The Flathead has sent in excess of 4,000 of its sons and daughters into the armed forces of the United States to fight to protect their homes and country. I sincerely hope that when they return they will not find that they have won the war abroad only to find that they have lost their valley and the homes which they have looked forward to and which they felt that they were defending in this war. Montana has made many contributions to the war through its manpower. Forty-eight thousand three hundred and eighty-eight out of a draft register of 127,958—and this includes all the 18-44's—had by December 9, 1943, entered the service of their country. We have been among the leaders in the buying of bonds and in the giving of our natural resources, but Montana has been treated shabbily in the matter of war industries since the war started and many of our people have been forced to leave the State to work in other parts of the country. This matter of the proposed raising of Flathead Lake was another indication of our being treated unfairly. However, thanks to the consideration which Congress gave us and to the deadly serious and united support of every person in the State of Montana, we were able to have an investigating committee sent to the Flathead this past summer and out of that has come the proposal for the authorization of the Hungry Horse Dam.

Few States in the Union have greater water resources than Montana, but we have not realized the full value of them until just lately. Two of the largest rivers in the United States, the Missouri and the Columbia, rise in Montana, and Montana is the only State which can boast of rivers draining into the Pacific Ocean, the Gulf of Mexico, and Hudson Bay. The annual flow of all its rivers would cover the entire State with 6 inches of water, and this flow would irrigate in excess of 10,000,000 acres, although actually only 2,000,000 acres are irrigated at the present time and less than two-thirds of these have adequate water all the time. The rivers of Montana could supply 3,700,000 horsepower of electric energy, which is about one-tenth of the estimated hydroelectric capacity for the entire United States. Only four States—California, New York, Oregon,

and Arizona—have greater potential power resources, and yet Montana's actual production is less than 500,000 horsepower.

Montana, fortunately perhaps, probably can never become a center of heavy industry or even predominantly industrial in the sense of light manufacture. However, there is no reason why, in time, power should not be developed in Montana to further the use of our alumina clays, our metals, and our forest resources. We would like to see in our State a well-developed, sound industrial economy, not based on war but based on a system whereby we would have a permanent means of integrating our resources, our power, and our people. We do want to advance gradually and soundly.

We in Montana look upon our State as a part of the Northwest and what is done in developing such projects as the Hungry Horse, we think, will benefit all the States of the region. Montana has raw materials in lavish supply, all kinds of minerals, and a varied and imposing list of agricultural products. We have a vigorous and hardy people who can furnish the necessary labor supply, for they are descendants of great men and women—the pioneers who settled this area in the first place. We have a great job to do in taking our place in the family of States. It cannot be done without sound thinking, wise planning, and hard work.

The answer to our problem concerning Flathead Lake and the Hungry Horse lies here in Washington. We have done everything we possibly can do, and now we are coming to you and asking that you give us the assurance, in the authorization of this bill, that nothing further will ever be done to destroy Flathead Lake. In the past there have been two attempts to take over that lake but to date they have been unsuccessful. We of Montana feel that though we have been successful in thwarting outside efforts twice, it is quite possible that the danger will rise again. Hence I am introducing this bill to cover authorization for the construction of the Hungry Horse Dam. This is an alternative proposal, in case another attempt is made to raise Flathead Lake. It is also insurance to us that such an attempt will not be made again if another and more feasible project is authorized.

The Bonneville Power Administration is behind the authorization; the Reclamation Service, which would have the control of the project, is in favor of it, and the Reclamation Service has indicated that approximately 100,000 acres would be benefited from irrigation furnished from the Hungry Horse Reservoir. In addition, of course, it would be of great value in power benefits to the State and to the region when the hydroelectric facilities are completed, and it would be of some value in flood control not only in the Flathead Valley itself but as far west as Idaho. Furthermore, on the proposed Hungry Horse site there is no farm land to be taken out of production, no railroads or highways or telephone lines to be flooded out, no homes to be destroyed. It is up in the mountains in the Flathead National Forest

and it will not decrease the value of the tax rolls.

It might be well also to point out at this time that in the State of Montana, and throughout a large part of the Northwest as well, our water flows fluctuate up and down. We have a series of wet years and a series of dry years, and if we should experience another dry period, as we did in the thirties, it might be imperative that the Bonneville Power Administration would have to develop quickly some new storage plan. In such a situation we would be afraid that they would pick Flathead Lake for the project if this bill—which I am discussing—is not passed.

I have with me today the report of the Northwest States Development Association, which is an organization of the Governors of Oregon, Washington, Montana, Idaho, and Wyoming, in which is recommended the construction of the Hungry Horse Dam as an immediate necessity. This association has made a very careful study of the various projects in the five Northwest States and has availed itself of all possible information from governmental departments, State, and private sources. The association recommends for immediate or early post-war construction only such projects as are urgently necessary and self-liquidating, which means that the Government will be entirely reimbursed and that there will be no charge against the taxpayers of the United States for such construction. The Hungry Horse project is, I repeat, entirely within the national forest, has no agricultural value, and a very limited value for the future production of timber as evidenced by the statement before the Irrigation Committee from the Department of Agriculture.

A few more facts before I finish. We have been told by reclamation engineers who have carried on soil analyses in the Flathead area that much of our land will be worthless inside of 20 years if it is not taken care of and built up now through use of irrigation waters and rotation of crops.

For almost 16 years the question of the raising of Flathead Lake has been held as a sword of Damocles over the heads of the people of Montana. I believe, Mr. Speaker, that the insecurity this caused has retarded development in Montana and that the resulting instability has cost many times more than the price of the cost of the Hungry Horse Dam.

I should also like to call to your attention, Mr. Speaker, that every person and every group in Montana is wholeheartedly behind this project. For the first time in the history of our State we have achieved unity on a single domestic proposition. That unity was born when the Flathead was threatened last summer; that unity has survived in the desire for the authorization of the Hungry Horse. This is not class or partisan legislation; it is the plea of a united people for what they believe to be right and just. They believe that this is the most important piece of legislation they have ever asked from Congress and they feel that its enactment will benefit them and the entire Northwest for all time.

Mr. Speaker, I have stated the case for the Hungry Horse. This bill means everything to the people of my State and they are looking to this House this afternoon with hope and confidence. In their behalf I urge you with all the energy that I have not to let us down. We have felt all along that our only safeguard was the Congress of the United States. We fought hard to retain what we think is justly ours. I am asking you this afternoon to pass this bill which we know will give us security, assure our future, and lay the ground work for the development of a greater Montana and, by the same token, a greater America.

Mr. Speaker, at this time, I insert some suggestions concerning the economic justification for the Hungry Horse Dam project.

The proposed Hungry Horse Dam is a major feature of a large comprehensive plan now in preparation for maximum economical utilization of the headwaters of the Columbia River in Montana for irrigation of lands in the so-called Kalispell area, for power production, and for flood-control and related benefits.

Originally a dam at Bad Rock Canyon was planned to divert adequate water from the natural flow of the Flathead River below the junction of the North and South Forks to supply the Kalispell area. However, after a thorough examination of the Bad Rock site, it became apparent that unfavorable geologic and topographic conditions preclude the construction of a safe structure except at a tremendous cost necessary to overcome unusual foundation conditions and topographic difficulties in connection with an exceedingly large spillway requirement. The unsuitability of the Bad Rock site eliminates the North Fork as a potential direct source of supply, thus making upstream supplemental storage on the South Fork a necessary requirement.

The Hungry Horse site on the South Fork of Flathead River would be so situated that it would afford, as one of its multiple functions, this service to the irrigation project and was therefore considered by the Bureau of Reclamation as a post-war development in connection with the Kalispell area.

Flathead Lake has been looked to as a resourceful site for regulation of the headwaters of the Columbia River. However, regulation accomplished through raising the Kerr Dam constructed by the Montana Power Co. at the outlet of Flathead Lake would bring about the inundation of nine towns: Polson, Big Arm, Elmo, Dayton, Rollins, Somers, Lakeside, Holt, and Big Fork, also a portion of the town of Kalispell and about one-fourth of the irrigable land in the Kalispell area.

The construction of Hungry Horse Dam, Reservoir, and power plant would eliminate present agitation and possible future proposals for raising Kerr Dam with its accompanying wasteful abandonment of properties surrounding Flathead Lake. The proposed dam affords the desired stream flow regulation for flood control as well as for downstream power plants, and would materially in-

crease the firm power output of these plants, including Grand Coulee Dam. It would also permit the generation of electrical energy at the site and afford an adequate stored water supply for the irrigation of about 100,000 acres north of Flathead Lake. H. R. 3570 authorizes the immediate construction of the dam, including facilities for generating electric energy, to a height necessary to impound approximately 1,000,000 acre-feet and also later construction of the remaining portion of the dam and additional irrigation works when necessary materials are available.

Although the investigations are not fully completed, reliable information is in hand which emphasizes the economic feasibility of the undertaking for immediate construction and for its long-range benefits to the region, the State, and the Nation.

The regulation of 1,000,000 acre-feet of storage at the Hungry Horse site would result in an immediate increase in the firm power output of existing downstream plants. The need for an increase in the hydro firm output in the Northwest area was emphasized during past low run-off periods demanding the consumption of a valuable and limited fuel-oil supply in order to supplement the hydro production of electrical energy. It is highly significant that this waste of fuel oil can be eliminated, and, in addition, new blocks of energy can be made available during the war period without the expenditure of highly critical materials and labor involved in the manufacture and installation of additional electrical generating equipment if that means were resorted to.

The firm power output of the hydro power plants on the Columbia River system is limited to production which can be sustained during the period of critical low run-off. Had Hungry Horse Reservoir been in operation during July 1940 to March 1942, the most critical low run-off period of record, it would have been possible to increase the sustained release of Flathead Lake by 800 second-feet, permitting the following increases in firm output at existing and prospective power plants:

Plant	Head	Increase in firm continuous output with Hungry Horse storage
Existing power plants:	Feet	Kilowatts
Kerr.....	185	9,000
Thompson Falls.....	50	2,400
Grand Coulee.....	300	14,700
Rock Island.....	32	1,600
Bonneville.....	50	2,400
Total existing.....	617	130,100
Potential power plants:		
Cabinet Gorge.....	107	5,200
"Z" Canyon.....	280	13,700
Foster Creek.....	160	7,800
Chelan.....	90	4,400
Rocky Reach.....	55	2,700
Priest Rapids.....	130	6,300
Umatilla Rapids.....	50	2,400
Arlington.....	50	2,400
John Day Rapids.....	60	2,900
The Dalles.....	75	3,700
Total potential.....	1,057	51,500

¹ Say 30,000.

² Say 60,000.

A conservative valuation of downstream power benefits has been assumed on the basis of \$10 per kilowatt-year for the existing power plants which would give an annual value of \$300,000.

Using the entire live storage content of the reservoir to supplement the natural stream flow during the critical low-flow period July 1940 to March 1942, a continuous discharge of 2,000 second-feet could be maintained at Hungry Horse power plant. The average head during this period is estimated to be 315 feet. Assuming an over-all efficiency of 80 percent, there would have been produced 43,000 kilowatts of firm continuous power, or 377,000,000 kilowatt-hours of firm energy annually. The irrigation project will require annually approximately 9,000,000 kilowatt-hours of firm energy for pumping. It is estimated that an annual average of 120,000,000 kilowatt-hours of secondary energy will also be available. The total output is thus expected to be as follows:

	Kilowatt-hours
Use for project pumping.....	9,000,000
Firm commercial.....	368,000,000
Secondary.....	120,000,000
Total.....	497,000,000

The firm power generated at Hungry Horse power plant is estimated to have a value of \$17.50 per kilowatt-year delivered at load centers. On the basis of a 70-percent load factor and 10-percent transmission-line loss for the 42,000 kilowatts of firm continuous output in excess of project pumping, the annual gross value is \$950,000. Annual operation and maintenance charges, replacements, and repairs, and transmission costs are estimated to be \$300,000, leaving a net annual value—ahead of interest and amortization—of \$650,000.

Most of the potentially irrigable area to be served from the project is now dry-farmed. Of this area approximately 30 percent is devoted to the production of wheat and other small grains. The rainfall, about 7½ inches during the crop-growing season, is inadequate to assure the pasture and forage that is needed for the livestock industry of the area. Such hay crops as are produced are usually limited to one cutting per year. Some potatoes and peas are grown under dry-farming methods on these lands, but the average yields are very low and the results uncertain due to low rainfall.

With irrigation, the production of potatoes, dairy products, and peas will be substantially increased. The present livestock industry would be materially benefited and stabilized through the increase in assured forage crops. The potentially irrigable area is about 100,000 acres.

Indicative of what may be expected on the Kalispell area with irrigation is the fine record of production being achieved on the nearby irrigated area below Flathead Lake, where approximately 180 bushels of potatoes, 25 bushels of dried field peas, 35 bushels of wheat (spring and winter), 50 bushels of barley, 85 bushels of oats, 25 bushels of rye, and 3 to 3½ tons of alfalfa hay are yielded per acre. Preliminary information indicates that, with irrigation, the lands in

the Kalispell area will bring about the creation of food and new wealth to the extent of approximately \$2,000,000 annually over and above the present production.

Control at Hungry Horse Dam of high-water flows would allow a sustained production on 8,000 to 8,500 acres of nearby lands on the main stem of the Flathead River. These lands are now used only to produce wild hay. With the threat of inundation removed, they will be elevated into a class of high productivity. Flood-control benefits will also extend many miles downstream to additional lands and areas with a noticeable effect being experienced as far as Pend Oreille Lake. It is roughly estimated that flood-control benefits will approximate \$100,000 annually.

With due regard for the worth of fulfilling war demands, post-war rehabilitation, social and prosperous growths, recreation and other indirect immeasurable benefits, the estimated value of direct benefits anticipated from the development of the Hungry Horse Dam project offers sufficient cause for justification for its construction. The direct benefits alone exceed the total estimated project costs.

Assuming 3 percent interest and a 40-year amortization period, the total annual Federal cost on a \$40,000,000 investment would be \$1,800,000. The landowners' annual cost would be interest on their investments \$150,000, irrigation operation and maintenance \$150,000, and increased taxes, and so forth, \$100,000, making a total landowners' cost of \$400,000. Operating costs for power features have been deducted in computing benefits. The total national annual cost is therefore \$2,200,000. The annual direct benefits total \$3,050,000, as follows:

Irrigation (gross)-----	\$2,000,000
Flood control-----	100,000
Local power-----	650,000
Downstream power-----	300,000
Total-----	3,050,000

[Mr. HORAN addressed the House. His remarks will appear hereafter in the Appendix.]

Mr. O'CONNOR. Mr. Speaker, the proposed Hungry Horse Dam is a major feature in the development, not only of the western part of Montana, but of the entire Northwest as a whole. As a member of the investigating committee authorized by this House and sent to the Northwest last summer, I feel that I am in a good position to report to you not only my feeling on this proposed authorization but also the feelings of the people of Montana as a whole. When the Army engineers came into the Flathead last spring, it was the second attempt on the part of the Federal Government in 16 years to regulate the raising of Flathead Lake to such a degree that great harm would result, not only to the country as a whole but to the people living in the areas adjacent to the lake itself. The original proposal was to raise the lake 17 feet and eventually, within a 2 or 3-year period, 37 feet. The raising of the lake, of course, would have meant that a huge storage reservoir would have been created and

that in drought periods that reservoir would be released to furnish firm water power for Grand Coulee and Bonneville downstream on the Columbia. It would have meant also that this raising and lowering of the lake to fulfill the needs of the downstream power concentrate would have made an unsightly mess of the surrounding territory and in that we would have destroyed one of the scenic wonderlands of this country. In addition, forty-five to fifty thousand acres would have been taken out of production and 25,000 people would have been directly affected and many more throughout western Montana indirectly affected. People who have saved all their lives to retire to the Flathead would have been forced to leave the area due to the destruction of their homes. Whole towns such as Big Fork, Dayton, Somers, Big Arm, and Lakeside, would have been under water and large towns and cities like Polson and Kalispell would have been partially inundated and made to a large extent worthless. A large and thriving lumber industry would have been destroyed and the effects of all these factors mentioned would have been felt as far away as Missoula to the south, Butte and Helena to the east, and Great Falls to the northeast.

The people were alarmed and rightly so at the proposal that faced them. They were told that this was a war emergency and that the Flathead Lake had to be raised to keep the war industries functioning farther down the Columbia and there are no more patriotic people in the world, Mr. Speaker, than the people of my State. They have far exceeded their quota on every War bond drive. They have contributed, as my colleague the gentleman from Montana [Mr. MANSFIELD] has already stated to you, in excess of 50,000 men to our armed forces. In the last war we sent more men on a per capita basis into the armed forces than any other State in the Union and after that war many of them did not return. This time, we want those service men and women of ours to come back to a Montana that they know and love. It is about time that we began to develop our resources for the benefit of our people so that the Treasure State, as it is so aptly termed, can build on a foundation of security.

The people of Montana are vitally interested in this proposed authorization bill and they are looking to the Congress of the United States to heed the just and reasonable request that this bill be passed. They have always, Mr. Speaker, looked to this body as their final hope and they feel that you will give them the just consideration which is due every American by right. I could go into detail explaining the situation which existed in Montana during the last spring and summer but I am sure that by this time all of you are acquainted with the dangers, and they were really dangers which we faced and which had to be overcome. We think that by the passing of this bill that we will take the first step toward the building of a sounder State and that in building up a sounder Montana we can encourage industry to come in and which will use our resources and benefit

our own people. Fundamentally we feel that in doing this we will be contributing to the welfare and prosperity of the Northwest as a whole. We are not selfish in fighting for what we consider our right because we feel that if our water resources are developed properly the rest of the region will likewise benefit through the creation of a permanent water supply and in that respect irrigation can be carried on. In other parts of the region industry will advance because of the secure knowledge that firm water power will be available and the people as a whole will be able to develop a well-integrated economy which will work for the benefit for not only one State but all States in that region and we who represent that region feel that in building a greater Northwest we can contribute to the welfare and the future of a greater America.

The bill was ordered to be engrossed and read a third time, was read the third time, and passed, and a motion to reconsider was laid on the table.

House Resolution 481 was laid on the table.

EXTENSION OF REMARKS

Mr. MICHENER. Mr. Speaker, I ask unanimous consent that all Members who so desire may extend their remarks on this bill immediately preceding the vote on the bill.

• The SPEAKER. Is there objection to the request of the gentleman from Michigan?

There was no objection.

Mr. EBERHARTER. Mr. Speaker, I ask unanimous consent to extend my remarks in the RECORD and include therein a statement by John Roy Carlson.

The SPEAKER. Is there objection to the request of the gentleman from Pennsylvania?

There was no objection.

[The matter referred to appears in the Appendix.]

REPLY TO REPRESENTATIVE McMURRAY'S EXTENSION OF REMARKS OF APRIL 18, 1944

The SPEAKER. Under a previous order of the House, the Chair recognizes the gentleman from Wisconsin [Mr. SMITH] for 10 minutes.

SCURRILOUS ATTACK UNWARRANTED

Mr. SMITH of Wisconsin. Mr. Speaker, on last Tuesday, April 18, the gentleman from Wisconsin, HOWARD J. McMURRAY, extended his remarks in the RECORD on page A1985 and included a copy of a letter addressed to the Milwaukee Journal, which appeared in that publication on the 14th of April 1944.

I take this time to reply in part to a question that was asked by the writer of the article which challenges the patriotism of the five Republican Members from the State of Wisconsin who voted for the soldiers' vote bill, which was passed. I quote in part from that letter:

I wonder if Representatives SMITH, STEVENSON, KEEFE, MURRAY, and O'KONSKI, of Wisconsin have sons in the service. If this item receives space, will the above-mentioned Representatives be kind enough to reply to the writer justifying their defeating votes?

78TH CONGRESS
2D SESSION

H. R. 3570

IN THE SENATE OF THE UNITED STATES

APRIL 24 (legislative day, APRIL 12), 1944

Read twice and referred to the Committee on Irrigation and Reclamation

AN ACT

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That for the purpose of irrigation and reclamation of arid
4 lands, for controlling floods, improving navigation, regulating
5 the flow of the South Fork of the Flathead River, for
6 the generation of electric energy urgently needed for the
7 war effort, and for other beneficial uses primarily in the
8 State of Montana but also in downstream areas, the Sec-
9 retary of the Interior is authorized and directed to proceed

1 as soon as practicable with the construction, operation, and
2 maintenance of the proposed Hungry Horse Dam (including
3 facilities for generating electric energy) on the South Fork
4 of the Flathead River, Flathead County, Montana, to such
5 a height as may be necessary to impound not less than one
6 million acre-feet of water.

7 SEC. 2. The Secretary of the Interior is authorized to
8 complete, as soon as the necessary additional material is
9 available, the construction of the Hungry Horse Dam so
10 as to provide a storage reservoir of the maximum usable and
11 feasible capacity.

12 SEC. 3. The Secretary of the Interior is authorized to
13 construct, operate, and maintain under the provisions of the
14 Federal reclamation laws (Act of June 17, 1902, 32 Stat.
15 388 and Acts amendatory thereof or supplementary thereto),
16 such additional works as he may deem necessary for irriga-
17 tion purposes. Such irrigation works may be undertaken only
18 after a report and findings thereon have been made by the
19 Secretary of the Interior as provided in such Federal recla-
20 mation laws; and, within the limits of the water users' repay-
21 ment ability, such report may be predicated on allocation to
22 irrigation of an appropriate portion of the cost of construct-
23 ing said dam and reservoir. Said dam and reservoir and
24 said irrigation works may be utilized for irrigation purposes

1 only pursuant to the provisions of said Federal reclamation
2 laws.

3 SEC. 4. There are authorized to be appropriated such
4 sums as may be necessary to carry out the purposes of this
5 Act.

Passed the House of Representatives April 20, 1944.

Attest:

SOUTH TRIMBLE,
Clerk.

78TH CONGRESS
2^D Session

H. R. 3570

AN ACT

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

APRIL 24 (legislative day, APRIL 12), 1944

Read twice and referred to the Committee on
Irrigation and Reclamation

PROVIDING FOR CONSTRUCTION OF HUNGRY HORSE
DAM ON SOUTH FORK OF FLATHEAD RIVER IN STATE
OF MONTANA

MAY 8 (legislative day, APRIL 12), 1944.—Ordered to be printed

Mr. BANKHEAD, from the Committee on Irrigation and Reclamation,
submitted the following

REPORT

[To accompany H. R. 3570]

The Committee on Irrigation and Reclamation, to whom was referred the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The bill was amended as follows:

In the first line of the title of the bill strike out the words "as an emergency war project".

On page 1, lines 6 and 7 strike out the words "urgently needed for the war effort".

This committee has had pending before it since November 1, 1943, a companion bill, S. 1496, sponsored by Senators Wheeler and Murray.

The committee conducted complete hearings on S. 1496 on February 3 and 4, 1944. All interested departments of the Government were invited to attend the hearings. The Secretary of the Interior, on February 19, 1944, submitted to the chairman of the committee a letter expressing his views regarding S. 1496. The House bill, H. R. 3570, was amended to meet the objections raised by the Secretary of the Interior. The Secretary's letter is hereto attached.

INTERIOR DEPARTMENT,
Washington, D. C., February 19, 1944.

Hon. J. H. BANKHEAD,
*Chairman, Committee on Irrigation and Reclamation,
United States Senate.*

MY DEAR SENATOR BANKHEAD: You have asked for an expression of my views regarding S. 1496, entitled "A bill to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes."

I recommend that this proposed legislation be enacted after being amended in the following particulars:

(a) by deleting lines 3 to 8, inclusive, on page 1 of the bill, and inserting in lieu thereof the following: "That for the purpose of irrigation and reclamation of arid lands; for controlling floods, improving navigation, and regulating the flow of the South Fork of the Flathead River, for the generation of electric energy urgently needed for the war effort, and for other beneficial uses, primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed";

(b) by deleting the word "immediately" in line 9, on page 1, and substituting "as soon as practicable";

(c) by inserting a comma after the word "construction", in line 9 on page 1 of the bill, together with the following: "operation and maintenance";

(d) by deleting the word "immediately" in line 4, page 2;

(e) by substituting the phrase "not less than" for the word "approximately" in line 4 on page 2;

(f) by deleting all of section 2 following the word "reservoir" in line 9 on page 2, and by substituting therefor "of the maximum usable and feasible capacity";

(g) By adding a new section 3, reading as follows:

"SEC. 3. The Secretary of the Interior is authorized to construct, operate, and maintain under the provisions of the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, and acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in said Federal Reclamation Laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal Reclamation Laws."

(h) Section 3 of the bill would then become "SEC. 4."

This proposed project has been viewed in the light of comprehensive, long-range plans for the multiple-purpose development of the Columbia River Basin which for some years have been urged by the Bonneville Advisory Board, the Corps of Engineers, the Bureau of Reclamation, and other Federal agencies, and more recently by the newly organized Pacific Northwest Development Association. These plans, formulated with due consideration of the need of and benefits from navigation, flood control, irrigation, and land development and power founded upon investigations of wide scope, provide a basis for the improvement and stabilization of the economics of various parts of the region as well as the Northwest as a whole. The foregoing recommendation is accordingly predicated both upon an analysis of these plans for post-war development and upon the position that, while an over-all study of the Columbia Basin should be made, emergency projects should, nevertheless, be undertaken without waiting for the over-all study, particularly where such projects are integral parts of any comprehensive plan and will benefit downstream developments.

The Hungry Horse project would be located some 4 miles above the confluence of the South Fork and the Flathead River, in turn a tributary of the Clark Fork of the Columbia. The Clark Fork, because of its large discharge, its high elevation in the Columbia River system, and its point of discharge into the main Columbia above the international boundary and above all of the dams of the comprehensive development plan for the main stem of the Columbia, is the most strategic and important tributary of the Columbia from the standpoint of river regulation and effective use of its water resources. The Hungry Horse project is one of the major features of the comprehensive plan as it relates to the Clark Fork. It is a logical and significant unit in the over-all development program. It is a part of the basic program recommended by the State of Montana and has very wide and strong support throughout the State. Any region-wide basic program for water and land development will be seriously weakened by omission

of a project of its key character in the drainage basin scheme and in the regional economy.

The power output of the Columbia River may be increased either by the installation of additional dams and power plants on the river, or by the development of upstream water storage, or by a combination of these means. The combined method—a concurrent and integrated development of river installations and of upstream projects for storage and other economic purposes—is desirable.

Upstream storage development permits the repeated use of water for multiple purposes. It provides for needed water and land development in headwater areas. It distributes the work and the long-term benefits of drainage basin development. It provides advantages not otherwise available to upstream and interior States and areas. It is in accord with the logical policy of basin-wide physical and economic development, and not merely one looking toward the most efficient use of all water resources from an engineering standpoint.

The water storage provided by the Hungry Horse Reservoir would be a logical part of any plan and program for the general development of water storage capacity and improved regulation of the Columbia River system. The reservoir would be located in a valley, with little damage to forest areas and practically none to other land, agricultural, and community resources. The reservoir would lie above developed area and potential agricultural land development areas in the Flathead and Claerck Fork Valleys. Use of the reservoir will have major values in power production, minor values in the improvement of navigation downstream, and in flood protection for the upper Flathead and Pend Oreille Valleys, and potential values with respect to ultimate full irrigation uses of water.

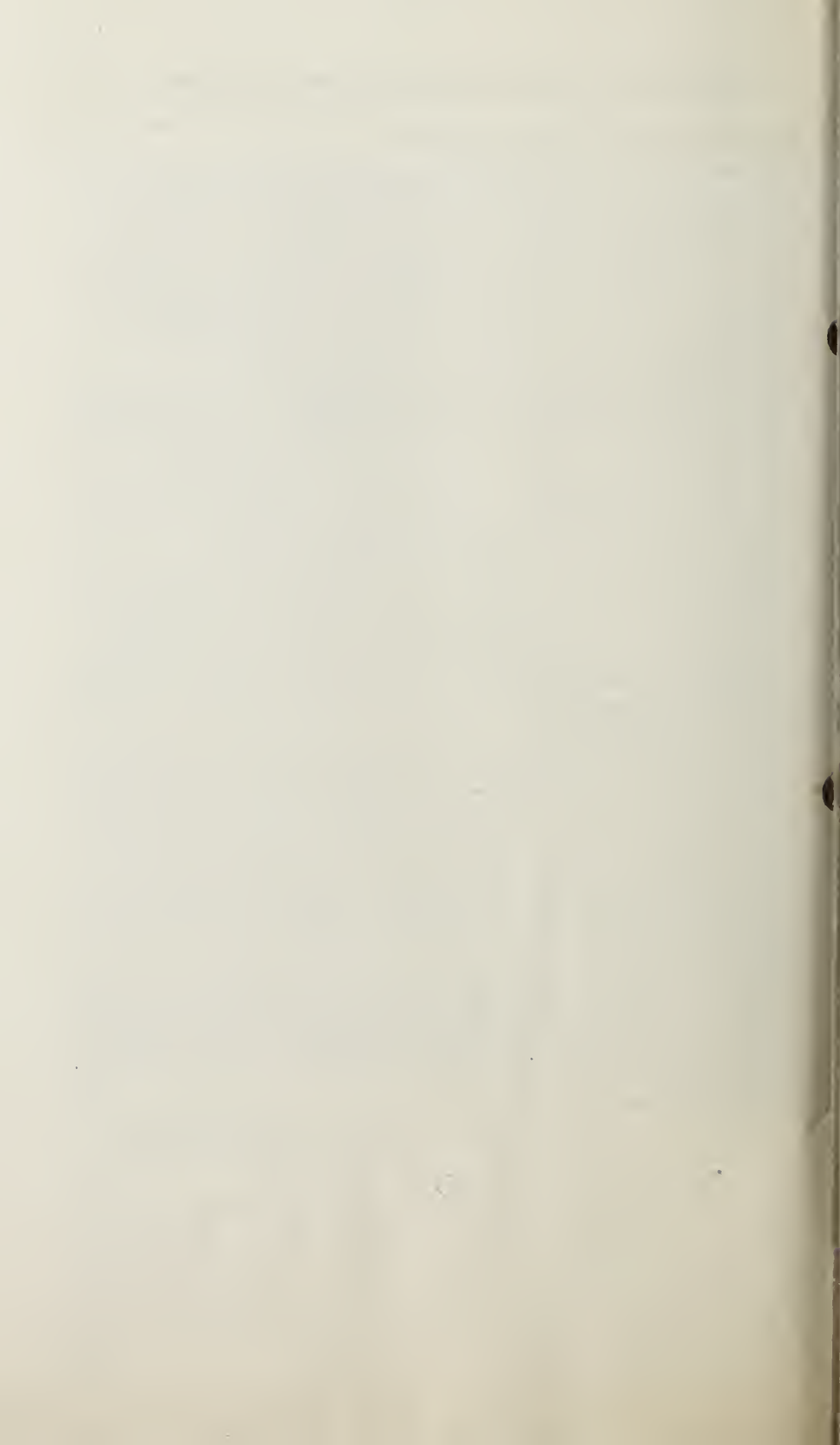
From a power viewpoint, water storage of 1.5 million acre-feet will make a most significant contribution in the form of incidental downstream benefits. It is estimated that the firm power capacities of existing downstream power plants at Polson, Thompson Falls, Grand Coulee, Rock Island, and Bonneville will be increased to the extent of some 78,000 kilowatts. When the increase in the firm power capacities of the power plants likely to be installed downstream as a part of the contemplated post-war development is also taken into account, the total increase in firm power capacity directly attributable to the Hungry Horse project will be about 284,000 kilowatts.

The project is considered economically feasible subject to the insurance or development of its power market. Power installations should be made in advance of a promising market. Availability of power at suitable volume and low cost is essential to the development of latent resources, of industries and communities, which provide the market for power and thus close the circle. Since the area that will be served with the power that will eventually be developed at the project is plainly a part of the Columbia River Basin and thus a part of the Columbia River power market, it follows that the Bonneville Power Administration in the Department of the Interior is the agency which should market such power as may be generated at the Hungry Horse project. In this manner the project can be integrated with the other Federal power developments in the basin and abundant low cost electric power can be made available throughout the area, including western Montana.

I have been advised by the Bureau of the Budget that "while there would be no objection by this office to the presentation of your proposed report on the bill, it is not believed that this project could be satisfactorily justified as an emergency war project, and that, since the President has given approval to the current construction of public works only when they are essential to the war effort, the enactment of the bill, S. 1496, should not be considered to be in accord with the President's program."

Sincerely yours,

ABE FORTAS,
Acting Secretary of the Interior.



Calendar No. 873

78TH CONGRESS
2D SESSION

H. R. 3570

[Report No. 862]

IN THE SENATE OF THE UNITED STATES

APRIL 24 (legislative day, APRIL 12), 1944

Read twice and referred to the Committee on Irrigation and Reclamation

MAY 8 (legislative day, APRIL 12), 1944

Reported by Mr. BANKHEAD, with amendments

[Omit the part struck through]

AN ACT

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That for the purpose of irrigation and reclamation of arid
4 lands, for controlling floods, improving navigation, regulating
5 the flow of the South Fork of the Flathead River, for
6 the generation of electric energy ~~urgently needed for the~~
7 ~~war effort~~, and for other beneficial uses primarily in the
8 State of Montana but also in downstream areas, the Sec-

1 retary of the Interior is authorized and directed to proceed
2 as soon as practicable with the construction, operation, and
3 maintenance of the proposed Hungry Horse Dam (including
4 facilities for generating electric energy) on the South Fork
5 of the Flathead River, Flathead County, Montana, to such
6 a height as may be necessary to impound not less than one
7 million acre-feet of water.

8 SEC. 2. The Secretary of the Interior is authorized to
9 complete, as soon as the necessary additional material is
10 available, the construction of the Hungry Horse Dam so
11 as to provide a storage reservoir of the maximum usable and
12 feasible capacity.

13 SEC. 3. The Secretary of the Interior is authorized to
14 construct, operate, and maintain under the provisions of the
15 Federal reclamation laws (Act of June 17, 1902, 32 Stat.
16 388 and Acts amendatory thereof or supplementary thereto),
17 such additional works as he may deem necessary for irriga-
18 tion purposes. Such irrigation works may be undertaken only
19 after a report and findings thereon have been made by the
20 Secretary of the Interior as provided in such Federal recla-
21 mation laws; and, within the limits of the water users' repay-
22 ment ability, such report may be predicated on allocation to
23 irrigation of an appropriate portion of the cost of construct-
24 ing said dam and reservoir. Said dam and reservoir and
25 said irrigation works may be utilized for irrigation purposes

1 only pursuant to the provisions of said Federal reclamation
2 laws.

3 SEC. 4. There are authorized to be appropriated such
4 sums as may be necessary to carry out the purposes of this
5 Act.

Amend the title so as to read: "An Act to provide for
the partial construction of the Hungry Horse Dam on the
South Fork of the Flathead River in the State of Montana,
and for other purposes."

Passed the House of Representatives April 20, 1944.

Attest:

SOUTH TRIMBLE,

Clerk.

AN ACT

To provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

APRIL 24 (legislative day, APRIL 12), 1944
Read twice and referred to the Committee on
Irrigation and Reclamation

MAY 8 (legislative day, APRIL 12), 1944
Reported with amendments

gation districts because of the right to vote according to the total number of acres held. The bylaws of a water users' association cannot be changed without the approval of the Secretary of the Interior.

A judicial determination by the Treasury Department in the case now pending before the Board of Tax Appeals, if decided adversely to the Salt River Valley Water Users' Association, would result in an interpretation binding on the United States, and consequently on the Interior Department, to the effect that the revenues produced by the Federal reclamation project works are owned by the association which operates them, and that the association owns the equity in these works, the Government retaining title for security purposes only. Such conclusions would be entirely contrary to the purpose and policy of the Federal reclamation laws.

The reclamation laws, making money from the United States Treasury available for the reclamation of arid lands, do not contemplate that any intermediary between the Government and the landowners shall make a profit out of the revenues produced by these Federal properties, nor acquire any proprietary interest in them. The association in question does not assert any such ownership in revenues or properties. It claims to be simply a conduit between the landowners and the Government.

The officials of the Salt River Valley Water Users' Association have furnished me with a copy of the inquiries addressed by the Secretary of the Treasury to the Secretary of the Interior under date of February 20, 1942. I quote these inquiries with my comments thereon:

"No. 1. Are the purposes, form of organization, and financial structure of Salt River Valley Water Users' Association fundamentally the same as the purposes, form of organization, and financial structure of other water users' associations and irrigation districts?"

They are. This water users' association is one of 14 associations with which the Reclamation Bureau has contracts. Federal reclamation laws recognize associations and district indiscriminately and authorize the Secretary to contract in exactly the same way with either form of water users' organization. This is demonstrated by various laws, in the enactment of which I actively took part, now embodied in the following sections of the United States Code: 423 (d), 485 (h), 485 (c), 477, 491, 493, 498, 499, 500, 501, 511, 521, 523, of title 43.

The association's stock is appurtenant to the land, like the water rights, and cannot be sold separately. Association landowners vote in proportion to their acreage, and pay association assessments, instead of district taxes, but the assessments, like taxes, are construed by the local courts as liens having precedence over private mortgages.

The Interior Department has always recognized the association type of organization as serving the same purposes and functions served by the public corporations in the matter of the repayment of the Government's investment in reclamation projects and in their operation and maintenance.

The general parallel between water users' associations and irrigation districts is explained in *Citrus Growers Development Association v. Salt River Valley Water Users' Association* (263 Pac. 773 (Ariz., 1928), at p. 775); *Saylor v. Gray* (20 P. (2d) 441 (Ariz., 1933), at p. 443); *Orme v. Salt River Valley Water Users' Association* (25 Ariz. 324, 217 Pac. 935). In the *Citrus* case, first cited, the Arizona Supreme Court said:

"Its affairs are conducted in many respects as are those of a municipal corporation, its purposes are those generally found only in organizations such as irrigation districts and other similar institutions, which are considered as municipal corporations for most purposes, and it has been given the right to exercise many powers similar to those usually

conferred only on branches of the Government. It can probably be best described as a private corporation with a public purpose, and having quasi-governmental powers."

"No. 2. Does the Department of the Interior exercise extensive control over the activities of the Salt River Valley Water Users' Association in furnishing water to members, in the distribution of electric power, both to members and nonmembers, in the determination of rates for both water service and power, and in the distribution of earnings from whatever source derived?"

The answer is in the affirmative. The Department is now conducting a study of power rates on the Salt River project, asserts the right to exercise plenary control over such rates, has power to make rules and regulations governing them, and requires that power contracts extending beyond 1 year be submitted to the Department for approval.

The degree of the Department's control over the application of earnings is a matter of construction of the Federal reclamation laws, the articles of incorporation and bylaws of the association, and the contracts between the association and the United States. While differing interpretations might be argued, inasmuch as both the statutes and the contracts have grown by a process of accretion during the evolution of the present Federal reclamation policies, the interpretation of its contracts asserted by the Salt River Valley Water Users' Association is in accord with existing departmental policies.

"No. 2. Is it the policy of the Bureau of Reclamation to encourage expansion of the activities of water users' associations in the distribution of electrical energy and to utilize the proceeds in amortizing the cost of construction of irrigation work and power projects?"

The answer is in the affirmative. The plan originally adopted was that of having the water users' associations or irrigation districts underwrite all the costs of a particular project and providing by statute that net power revenues should be credited to the total cost of the project. Provision was later made for application of the power revenues against current repayment installments. See subsection (l) of the act of December 5, 1924 (43 Stat. 703).

The present policy brings substantially the same result insofar as having power assist in the repayment of the project costs is concerned, but does not permit individual participation in power profits when repayment is complete (if, in fact, any individual participation after repayment was contemplated by the older law, which the Department does not concede would be the case, and which the association does not assert). Present policy requires an allocation, at the outset, of the estimated costs of the project which are to be borne by the water users and those which are to be returned from power revenues.

In determining the water users' obligation, consideration is given to their probable repayment ability. The water users are asked to assume only those costs allocated to them, and the United States, retaining title to the power facilities and revenues therefrom, assumes the responsibility for recovering the moneys invested in power plus whatever portion of the irrigation allocation is allocated to be returned from power revenues. Under this plan, the water users as a whole realize, from the commencement of the project, the benefit from power development. See section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187).

"No. 4. Is title to the project, including its power features, vested in the United States? Upon complete payment of the indebtedness incurred in respect of the project will title thereto under present law still remain in the United States? Does any 'equity' resulting from the activities of the Salt River Valley Water Users' Association

accrue to or be realized by individual members?"

As to the first question: Title to the project, including its power features, is vested in the United States, and by act of Congress must remain so until otherwise provided by Congress (sec. 6 of the act of June 17, 1902, 32 Stat. 388). This applies both to works built by the United States and works built by the association. The latter were constructed upon public lands of the United States pursuant to contracts providing specifically for the vesting of title in the United States.

As to the second question:

"Upon complete payment of the indebtedness incurred in respect of the project, will title thereto under present law still remain in the United States?"

Yes. Title remains in the United States to all these works until otherwise provided by Congress (sec. 6 of the act of June 17, 1902, supra). This result obtains after the repayment period as well as before.

As to the third question:

"Does any equity resulting from the activities of the Salt River Valley Water Users' Association accrue to or be realized by individual members?"

No. Neither the association nor its members have a contractual right to acquire title upon completion of repayment of the cost of the works, nor do they have any interest therein which is capable of hypothecation or sale, nor do they have any contractual right to obtain such an interest. The association, as a corporate entity, is entitled under the terms of its 1917 contract with the United States, to operate and maintain the project works, or, at its option, to return operation and maintenance to the United States; and it may be discharged from that function on failure to maintain the works to the satisfaction of the United States.

The function of the association as operator during the repayment period does not differ from its function as operator thereafter. Upon retirement from that function, voluntarily, or by action of the United States, in consequence of the association's failure properly to maintain the Federal works, it takes nothing with it; that is to say, it has not acquired, out of the receipt and disbursement of project revenues, or the operation of the Federal works, any assets or equity which it might liquidate. The same would be true if the association should dissolve. It would have no assets to distribute.

The individual landowners on every project, whether the project is operated by an association, by an irrigation district, or direct by the United States, do, of course, benefit by the gradual repayment to the United States of the obligations incurred for construction and operation of the works, particularly if power revenues are available for that purpose, in lieu of full collection of all charges by way of taxes or assessments. Upon completion of repayment, the individual landowner, regardless of how the project is operated, will undoubtedly hold a perpetual contract right entitling him to the delivery of water from the project works.

The important point is that there is no distinction in this respect between landowners on projects operated direct by the United States, projects operated by districts, and projects operated by associations, and consequently there should be no differentiation in the tax policies applicable to the revenues from water and power which go to accomplish this result, whatever the exact nature of the resulting contractual claim of the individual landowners upon the United States may be after repayment of the debt.

RECOMMENDATION

There is a definite conflict between the policies of the Interior Department, on the one hand, reflecting the policies of Congress as expressed in the reclamation laws, in making Federal funds available for the construc-

tion of reclamation works and making power revenues available to help pay for them, all so that the farmers will not have to pay more for water than they can afford; and, on the other hand, the policy of the Treasury Department, expressed in the pending Salt River Valley Water Users' Association tax case, to collect income and excess-profits taxes upon these same power and water revenues as though the projects were built and operated for private gain. That conflict ought to be resolved by an agreement between the two Departments at the policy-making level.

The pending Salt River tax case should be closed by a stipulation between the Treasury and the association, satisfactory to the Interior Department, correctly stating and applying what we all know to be the intent of the reclamation law as to the Government's ownership of and control over project works and revenues, and the consequent lack of any taxable interest in them for the account of anyone else.

The Interior Department ought to take the strongest possible initiative in the matter, bearing in mind that while the Treasury will suffer no loss of future revenue by such a settlement, inasmuch as all of the associations are perfectly free to change into district tax-free forms of organizations, the Reclamation Bureau will suffer serious embarrassment if the case goes to trial and the Bureau of Internal Revenue wins. Such a decision would lay the foundation for the claim on every project, whether operated by districts or by associations, that the operator owns the project and its revenues, and that the Government holds title simply for security. The association form of operation would be lost to the farmers as well as the Government, and the so-called equity would probably be laid open to local ad valorem taxation, bankrupting every project exposed to it.

The Salt River Valley Water Users' Association has been a successful operating device since 1903 and should not be driven into a district form of organization under the pressure of nonuniformity in the administration of tax laws.

Respectfully submitted.

CARL HAYDEN,
United States Senator from Arizona.

SALT RIVER VALLEY WATER
USERS' ASSOCIATION,
Washington, D. C., June 25, 1942.
HON. HAROLD L. ICKES,
The Secretary of the Interior,
Washington, D. C.

MY DEAR MR. SECRETARY: Senator HAYDEN has shown us the memorandum he has written you on the subject of the taxes which the Bureau of Internal Revenue is endeavoring to collect on the power and water revenues of the Salt River project.

I have read it, and so have the other members of the board of governors, who are here with me in Washington, and we entirely agree with what the Senator says.

I simply want to add that if there is any uncertainty arising from the association's contractual relations with the Secretary of the Interior, which I do not believe to be the case, and if it proves necessary in order to dispose of the tax problem, the association will gladly proceed to amend those contracts to conform with the principles stated in the Senator's memorandum.

These involve the Secretary's power of review and control over power contracts and rates, Federal title to all of the project's power and water facilities, Federal ownership of the net power revenues after the repayment of all investments of the power and water facilities of the project (subject to the continuing right of the project to the utilization of power for pumping and project purposes), and Federal authority over the association's operation and maintenance of the power and water facilities of the project. We

believe the contracts are clear in these respects now, but we will be glad to make them explicit if there is any uncertainty about them which exposes the project to taxation. It is unreasonable that the project should be taxed upon an interpretation of the contracts not asserted by either party to them, giving us greater rights than we claim or the Department would grant.

Respectfully,

LIN B. ORME, *President.*

BILL PASSED OVER

The bill (H. R. 3429) to amend section 1 of an act entitled "An act authorizing the Secretary of the Interior to employ engineers and economists for consultation purposes on important reclamation work," approved February 28, 1929 (45 Stat. 1406), as amended by the Act of April 22, 1940 (54 Stat. 148), was announced as next in order.

Mr. VANDENBERG. I ask that the bill go over.

The ACTING PRESIDENT pro tempore. The bill will be passed over.

KLAMATH DRAINAGE DISTRICT

The Senate proceeded to consider the bill (H. R. 3476) to approve a contract negotiated with the Klamath drainage district and to authorize its execution, and for other purposes, which had been reported from the Committee on Irrigation and Reclamation with an amendment on page 3, line 19, after the word "increment", to strike out "of" and insert "to."

The amendment was agreed to.

The amendment was ordered to be engrossed, and the bill to be read a third time.

The bill was read the third time and passed.

HUNGRY HORSE DAM ON SOUTH FORK OF FLATHEAD RIVER, MONT.

The Senate proceeded to consider the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, which had been reported from the Committee on Irrigation and Reclamation with an amendment, on page 1, line 6, after the word "energy", to strike out "urgently needed for the war effort."

The amendment was agreed to.

The amendment was ordered to be engrossed, and the bill to be read a third time.

The bill was read the third time and passed.

Mr. DANAHER. Mr. President, is the Senate considering Calendar No. 873, House bill 3570?

The ACTING PRESIDENT pro tempore. The Senate has had under consideration and just passed that bill.

Mr. DANAHER. I was seeking recognition. I have no objection to action on the amendment, but I do not want action on the bill until an explanation may be made of it. I ask unanimous consent that the vote on the passage of the bill be reconsidered.

The ACTING PRESIDENT pro tempore. Without objection, the vote whereby the bill was passed is reconsidered.

Mr. DANAHER. Now, Mr. President, may we have an explanation of the bill for the RECORD, please?

Mr. WHEELER. Mr. President, this bill is simply an authorization for a project which has been under consideration and for which surveys have been made in Flathead Valley, Mont. The Senator has probably heard Members of Congress from Montana talk about the project. The Army engineers proposed to raise Flathead Lake some 20 feet, as I recall the height—I may not be exact in the figure—but because of protests which were made by people living in the district and because of the fact that it was proposed to flood large areas of farm lands, to leave the city of Kalispell practically an island, and to flood certain industries, particularly the lumber industries, this project was suggested as an alternative, for the purpose of storing up enough water in this particular region to help the flow of water downstream for the power projects at Spokane and also for irrigating certain lands. It is recommended by the Department of the Interior, by the Bonneville Power Authority, and also by the Reclamation Bureau.

The bill was passed by the House as an emergency war measure. The Bureau of the Budget objected to it, but said—and I have their letter—that they had no objection to it being proposed as a project to be completed after the war. The bill merely provides an authorization and not an appropriation.

The ACTING PRESIDENT pro tempore. Is there objection?

Mr. DANAHER. Mr. President, I ask that the bill be temporarily passed over.

Mr. WHEELER. I hope the Senator will not ask that the bill be temporarily passed over, because it passed the House some time ago. We have had hearings on it before the committee on two different occasions, and it is a matter of great urgency to the people of my State, where it has been under consideration for a long time. It is merely an authorization for a future appropriation after the war, if and when the Congress authorizes it.

Mr. DANAHER. Mr. President, I am constrained by the eloquence of the Senator from Montana to review my previous request, but I fail to find the urgency which he cites as applicable to a post-war proposition. I do not understand that we have to pass a bill this afternoon for a post-war program in Montana, however desirable it may be for the people of Montana.

My point in asking that the bill be temporarily passed over is simply in order that I may look into the program with reference to the desirability of authorizing facilities for generating electric energy. I do not know whether or not we wish to go into new authorizations of that character. It might well be that it is an eminently desirable and ultimately worthwhile end, but, Mr. President, I am not convinced of it, and I hoped that perhaps I could satisfy myself on that point by discussing it with Members of the Senate in whose judgment I have great confidence.

Mr. WHEELER. Let me say to the Senator that the urgency for the meas-

ure is that the War Department and the Bonneville Power Authority recommended the raising of Flathead Lake between, as I recall, 20 and 27 feet. The Members of Congress were not consulted the first time the recommendation was made by the War Department. Subsequently they came to me and asked my views about it. I suggested they have a hearing in the district. Such a hearing was held, and about 5,000 people attended the hearing and protested raising the dam on the Flathead Lake, raising the level of the lake, increasing the power, and taking over the present power site by the Government. Finally the Montana delegation, because of that protest, suggested if it was desired to have more water for the Bonneville project, the construction of this particular project, which would store water to take the place of a part of the water at least they would have by increasing the height of the lake.

The people of Montana and of that section generally agreed that this is one of the projects that should be undertaken, rather than to flood out hundreds of acres of the best land in Montana, to make an island out of the beautiful little city of Kalispell, in Flathead County, and flood the lumber mill of the Great Northern Railway located at Somers. This is the project which was worked out as a compromise to save these people.

The great emergency about it is this: The people there have been very much upset and greatly afraid that if this compromise bill is not passed the authorities will, perhaps by a directive, or something else, attempt to do what they have talked about doing in the past. The emergency is not incident to building the dam, but certainly there is an emergency insofar as allaying the fears of thousands of people in that section of the State that something more drastic may be done. The project is for the storage of water, for flood control, and for irrigation. That is the purpose of it.

Mr. DANAHER. Mr. President, can the Senator tell us what is the estimated cost of the project, if it were to be proceeded with?

Mr. WHEELER. I cannot say offhand, but I can say that testimony was taken before the committee. I have not the figures now before me; I may have them in the file. But as a project it is going to be absolutely necessary. The War Department and the Interior Department and others interested say that in order to supply sufficient water to operate the Bonneville Dam in dry years it will be necessary to store water on the upper reaches of the Flathead River which flows into the Columbia River.

Mr. DANAHER. Will the Senator from Montana yield?

Mr. WHEELER. I yield.

Mr. DANAHER. Does not the Senator's inability to answer the very question I asked indicate the reasonableness of my request that the bill be temporarily passed over?

Mr. WHEELER. Frankly, I do not think so. I can find the figures for the Senator in a very few minutes.

Mr. DANAHER. Then, if it be temporarily passed over, it may be that that

very few minutes will suffice. That is all I ask, that the bill be temporarily passed over.

Mr. WHEELER. If that is all the Senator wants, I am willing to have that done.

Mr. DANAHER. That is all I asked.

Mr. WHEELER. But I should like to have the bill passed today, because it has been on the calendar for some time.

The ACTING PRESIDENT pro tempore. Objection being heard, the bill will be passed over.

Mr. WHEELER subsequently said: Mr. President, I ask unanimous consent to recur to Calendar No. 873, House bill 3570, which was passed over at the request of the Senator from Connecticut [Mr. DANAHER]. I am sure the Senator has no objection now to passage of the bill.

The ACTING PRESIDENT pro tempore. The bill will be stated by title for the information of the Senate.

The CHIEF CLERK. A bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

The ACTING PRESIDENT pro tempore. Is there objection to the present consideration of the bill?

There being no objection, the Senate proceeded to consider the bill.

The ACTING PRESIDENT pro tempore. The committee amendment was previously agreed to.

The question is on the engrossment of the amendment and the third reading of the bill.

The amendment was ordered to be engrossed and the bill to be read a third time.

The bill was read the third time and passed.

The title was amended so as to read: "An act to provide for the partial construction of the Hungry Horse Dam on the south fork of the Flathead River in the State of Montana, and for other purposes."

NATIONAL SURVEY OF FOREST RESOURCES

The bill (H. R. 3348) to amend section 9 of the act of May 22, 1928, authorizing and directing a national survey of forest resources, was considered, ordered to a third reading, read the third time, and passed.

EXPORTATION OF CERTAIN COMMODITIES

The Senate proceeded to consider the bill (S. 1826) to amend section 6 of the act of July 2, 1940 (54 Stat. 714), relating to the exportation of certain commodities, and to continue said act in effect, which had been reported from the Committee on Military Affairs with amendments, on page 1, line 4, after the word "amended", to insert "by the act of June 30, 1942 (56 Stat. 463)", and on line 9, after the date "June 30", to strike out "1946" and insert "1945", so as to make the bill read:

Be it enacted, etc., That section 6 of the act of July 2, 1940 (54 Stat. 714), as amended by the act of June 30, 1942 (56 Stat. 463), is hereby amended by deleting from subsection (b) thereof the words "Board of Economic

Warfare" and substituting therefor the words "Foreign Economic Administration" and by deleting from subsection (d) thereof the words "June 30, 1944" and substituting therefor the words "June 30, 1945."

The amendments were agreed to.

The bill was ordered to be engrossed for a third reading, read the third time, and passed.

ESTATE OF WIDOW CESAIRE DE BLANC

The bill (S. 1593) for the relief of the heirs and assigns of Widow Cesaire De Blanc was considered, ordered to be engrossed for a third reading, read the third time, and passed, as follows:

Be it enacted, etc., That title to the following described lands, including all mineral rights therein, situated in Iberia Parish, La., which were located by Widow Cesaire De Blanc under school land warrant No. 1809, issued by the State of Louisiana on June 7, 1855, pursuant to the act entitled "An act to appropriate lands for the support of schools in certain townships and fractional townships, not before provided for," approved May 20, 1826 (4 Stat. 179), is hereby confirmed to the said Widow Cesaire De Blanc, her heirs and assigns: The north half of the southeast quarter of section 8, township 12 south, range 6 east of the Louisiana meridian.

CONFIRMATION OF TITLE TO THE SALINE LANDS, JACKSON COUNTY, ILL.

The bill (S. 1451), to amend the act entitled "An act for the confirmation of the title to the Saline Lands in Jackson County, State of Illinois, to D. H. Brush, and others", approved March 2, 1861, was considered, ordered to be engrossed for a third reading, read the third time, and passed, as follows:

Be it enacted, etc., That the act entitled "An act for the confirmation of the title to the Saline Lands in Jackson County, State of Illinois, to D. H. Brush, and others," approved March 2, 1861 (12 Stat. 891), is amended by striking out so much thereof as reads as follows: "To Stephen Holliday, the southwest quarter of the southeast quarter of the southeast quarter of section 31, township 8, of range 2", and inserting in lieu thereof the following: "To Stephen Holliday, the southeast quarter of the southeast quarter of section 31, township 8, of range 2."

SEC. 2. The amendment made by the first section of this act shall be effective as of March 2, 1861.

INVITATION TO CONGRESS TO SEND A DELEGATION TO THE BRITISH PARLIAMENT

The concurrent resolution (S. Con. Res. 43) relating to the invitation to the Congress of the United States to send a delegation to visit the British Parliament, was considered and agreed to, as follows:

Resolved, etc., That the Congress of the United States expresses to the House of Lords and the House of Commons of Great Britain its cordial appreciation for such invitation;

That because of the urgency of official business at this time, it will be impracticable for the Houses of the Congress to accept the invitation and to send a delegation of the Members to Great Britain at present;

That when the exigencies of public business make it possible such invitation will have further consideration by the Houses of Congress.

The preamble was agreed to.

Mr. BARKLEY. Mr. President, in connection with the concurrent resolution just agreed to, which is in reference

to an invitation officially extended by both houses of the British Parliament inviting the Congress of the United States to send a delegation of the two Houses to England as their guests, I think I should not let the opportunity pass to say that the Committee on Foreign Relations considered the concurrent resolution and, as will be seen from the measure, expressed its appreciation to the British Parliament for the invitation to send a delegation from the two Houses of Congress to England as their guests, purely an informational trip. The committee felt that the time was not propitious to try to take this trip, in view of our domestic situation, and with an election impending, and it might be difficult to obtain a delegation the members of which would be in the position to go. The concurrent resolution does not preclude the possibility of acceptance in the future. It merely states that at this time it is not appropriate to try to accept the invitation, but it does express the appreciation of the committee, and I wish to express the appreciation of the Senate to the two houses of the British Parliament, for the very courteous invitation they have extended to us, and to express my hope that at a later time we may be able to accept the invitation.

MARY ELLEN FRAKES

The Senate proceeded to consider the bill (H. R. 3126) for the relief of Mary Ellen Frakes, widow of Joseph A. Frakes, which had been reported from the Committee on Claims with an amendment, on page 1, line 5, after the words "sum of", to strike out "\$5,000" and insert "\$3,500."

The amendment was agreed to.

The amendment was ordered to be engrossed and the bill to be read a third time.

The bill was read the third time and passed.

PAUL J. CAMPBELL, LEGAL GUARDIAN OF PAUL M. CAMPBELL

The Senate proceeded to consider the bill (H. R. 1220) for the relief of Paul J. Campbell, the legal guardian of Paul M. Campbell, a minor, which had been reported from the Committee on Claims with amendments, on page 1, line 5, after the word "to", to strike out "Paul J. Campbell, of East St. Louis, Ill., the sum of \$2,000; to pay"; and, on line 8, to strike out "\$3,000" and insert "\$3,500."

The amendments were agreed to.

The amendments were ordered to be engrossed, and the bill to be read a third time.

The bill was read the third time and passed.

The title was amended so as to read: "An act for the relief of the legal guardian of Paul M. Campbell, a minor."

PAUL BARRERE

The bill (H. R. 1984) for the relief of Paul Barrere was considered, ordered to a third reading, read the third time, and passed.

HAMP GOSSETT CASTLE AND OTHERS

The bill (H. R. 3136) for the relief of Hamp Gossett Castle, and others, was considered, ordered to a third reading, read the third time, and passed.

SAUNDERS MEMORIAL HOSPITAL

The bill (H. R. 1737) for the relief of Saunders Memorial Hospital was announced as next in order.

Mr. DANAHER. Let the bill go over.

The ACTING PRESIDENT pro tempore: Objection being heard, the bill will be passed over.

WILLIAM E. SEARCH AND OTHERS

The bill (H. R. 1635) for the relief of William E. Search and the legal guardians of Marion Search, Pauline Search, and Virginia Search was considered, ordered to a third reading, read the third time, and passed.

CLARENCE E. THOMPSON AND MRS. VIRGINIA THOMPSON

The bill (H. R. 2408) for the relief of Clarence E. Thompson and Mrs. Virginia Thompson was considered, ordered to a third reading, read the third time, and passed.

REESE FLIGHT INSTRUCTION, INC.

The bill (H. R. 2507) for the relief of Reese Flight Instruction, Inc., was considered, ordered to a third reading, read the third time, and passed.

PETE PALUCK

The bill (H. R. 2689) for the relief of Pete Paluck was considered, ordered to a third reading, read the third time, and passed.

MCCULLOUGH COAL CORPORATION

The bill (H. R. 1519) conferring jurisdiction on the Court of Claims to hear, determine, and render judgment upon the claim of the McCullough Coal Corporation against the United States was announced as next in order.

Mr. DANAHER. I ask that the bill go over.

The ACTING PRESIDENT pro tempore. The bill will be passed over.

ESTATE OF JOHN BUBY

The Senate proceeded to consider the bill (H. R. 2855) for the relief of the estate of John Buby, which was read, as follows:

Be it enacted, etc., That the Secretary of the Treasury is authorized and directed to pay, out of any money in the Treasury not otherwise appropriated, to the estate of John Buby, of Brown City, Mich., the sum of \$5,475.86, in full settlement of all claims against the United States on account of the death of John Buby, who was fatally injured on December 20, 1942, when struck by a United States Army vehicle near Disco, Mich., on Michigan State Highway M-53: *Provided,* That no part of the amount appropriated in this act in excess of 10 percent thereof shall be paid or delivered to or received by any agent or attorney on account of services rendered in connection with this claim, and the same shall be unlawful, any contract to the contrary notwithstanding. Any person violating the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in any sum not exceeding \$1,000.

Mr. VANDENBERG. Mr. President, in respect to this bill I wish to make a brief statement and request. It is a bill to reimburse the widow of John Buby, the mother of eight children, for the loss of the life of her husband, the breadwinner of the family, as the result of an accident concerning which the responsibility

is unmistakable and incontrovertible. The War Department accepts the responsibility. The deceased was killed on a highway as the result of the negligence of the driver of an Army truck at that point.

Mr. President, when the House committee reported the bill—and the Senate committee report is based upon the House report—the House committee reported as follows:

Mr. Buby left a wife, 33 years of age, and eight minor children. The War Department recommends the sum of \$5,475.86. However, your committee are of the opinion that this would not be sufficient in view of the fact that he left eight children ranging from a baby born 3 months after his father's death, and others ranging from 1½ to 15 years of age, to be supported and educated. Therefore, your committee recommend the sum of \$7,975.86 be paid to the estate of John Buby.

Therefore, Mr. President, the sole question which I bring to the Senate is the question of whether, in respect to an accident for which the responsibility is accepted by the Government, the reimbursement of a mother of eight children is adequate at \$5,000 and expenses, or whether the compensation should be set at the point which the House committee recommended, \$2,500 more.

Mr. President, when the bill reached the floor of the House, the House amended it by cutting it back to the present figure. Since then I have been told that if it were resubmitted to the House the recommendation of the committee would unquestionably be accepted. I think the able Senator from Delaware [Mr. TUNNELL] was fully justified in reporting the bill on the basis on which it was passed by the House. I am merely asking that the Senate accept an amendment, for the purpose of taking it to conference, so that the matter may be resolved in the light of these facts.

I move that in line 6 the sum "\$5,475.86" be stricken out and that "\$7,975.86", as recommended by the House committee originally, be substituted. I shall be quite content to have the matter canvassed in conference, and any conclusion that is reached will be entirely satisfactory to me.

The ACTING PRESIDENT pro tempore. The amendment will be stated for the information of the Senate.

The CHIEF CLERK. On page 1, line 6, it is proposed to strike out "\$5,475.86" and to insert in lieu thereof "\$7,975.86."

Mr. TUNNELL. Mr. President, I do not think I have any objection to the amendment suggested by the Senator from Michigan. It is always a question with me, in the Committee on Claims, as to what should be done in a case where there are a widow and many children. I do not know how to divide the damage. There has been a sort of unwritten rule in the Committee on Claims that we would try to hold the damage for death down to \$5,000. To that sum from time to time have been added expenses, which perhaps is the reason for the amount fixed. I shall not offer any objection, under the circumstances.

The ACTING PRESIDENT pro tempore. The question is on agreeing to the amendment offered by the Senator from Michigan [Mr. VANDENBERG].



The Clerk read the title of the joint resolution.

The Clerk read the Senate amendments, as follows:

Page 2, lines 10 and 11, strike out "\$1,420,-836.03" and insert "\$1,767,616.11."

Page 4, line 22, strike out "3 years" and insert "1 year."

The SPEAKER. Is there objection to the request of the gentleman from Montana?

Mr. MARTIN of Massachusetts. Reserving the right to object, Mr. Speaker, will the gentleman explain these amendments?

Mr. O'CONNOR. I yield to the gentleman from Wisconsin [Mr. KEEFE], to explain them.

Mr. KEEFE. Mr. Speaker, this joint resolution passed the House unanimously on December 6, 1943. It passed the Senate on May 25, 1944, with two minor amendments. I should like to explain to the Members just what this resolution provides.

Mr. MARTIN of Massachusetts. Will the gentleman explain the amendments particularly?

Mr. KEEFE. I will explain the amendments as soon as I have explained what the resolution is, so that you will understand the resolution and then will understand what the amendments are.

The purpose of this bill is to settle the controversy between the United States and the State of Wisconsin and Menominee Indian Tribe, which dates back to 1854. It grows out of a situation which arose when, in 1854, the Government of the United States ceded certain lands to the Menominee Indians for a tribal reservation. Thereafter under the provisions of the Swamp Land Act it was held by the courts that the Government of the United States had ceded certain of this land involved in the treaty obligations to the State of Wisconsin under that act. Therefore the Menominees never did receive from the United States Government the number of acres of land that were supposed to be included within their treaty with the Government. Thereafter this Congress authorized the commencement of an action in the Court of Claims in behalf of the Menominee Tribe of Indians to ascertain the value of the land that should have been ceded by the Government to the Menominee Indians. That action has been tried and determined and the Court of Claims has entered an interlocutory decree holding that the Government failed to turn over to the Indians the lands provided by treaty. The interlocutory decree provided for the computation of the damages. The Government and the tribe have now agreed that the sum of \$1,767,616.11 represents the proper measure of damages. The original resolution as passed in the House provided for a judgment in the amount of \$1,420,836.03. The legislation passed by the House provided that in lieu of payment of this sum of money to the Indians the proceeds of the judgment should be used in purchasing these lands for the Indians by payment to the State of Wisconsin which has legal title to the land, the amount agreed upon in the final judgment.

The amount as finally agreed upon is the amount specified in the Senate bill, which raises the amount from \$1,420,836.03 to \$1,767,616.11, as the result of the findings resulting from the joint action of a cruise made by the State of Wisconsin and the Land Office of the Federal Government and the Department of the Interior. This bill has the approval of the Department of Justice, the Department of the Interior, the Indian Department, and the Bureau of the Budget. May I say also to the Members of the House that the Menominee Indian Tribe is one of the self-supporting tribes in the United States. Their principal support comes from the operation of a large sawmill which this Congress provided for years ago. They need this timber to get it out into the sawmill for war production purposes. There is involved on this land one of the finest stands of birch timber that exists in the United States. The Army and Navy are tremendously anxious to get that timber into the mill and get it into production. The only way that can be done is to pay the proceeds of the judgment against the United States that the Menominee Indian Tribe has, to the State of Wisconsin, as the purchase price of this timber land. This will then put these Indians in a position where they will be for all time self-sufficient. They are simply asking you to let them use their own money to acquire these lands and thus carry out what the Government of the United States originally agreed it would do, and give them the land that their treaty obligation called for. This is simple justice.

Mr. O'CONNOR. The Attorney General has already approved the Senate amendment.

Mr. KEEFE. The Senate amendments have been approved by the Attorney General and the Department of Justice and all the agencies of Government that are interested in this matter.

Mr. RANKIN. Mr. Speaker, will the gentleman yield?

Mr. KEEFE. I yield.

Mr. RANKIN. You say all the agencies of Government. Did you consult the F. E. P. C.? I want to warn the gentleman if he did not, and called those people Indians, he may be subject to be called up on the carpet down there and excoriated, as the Dallas News was, for mentioning the race. They would much rather see those Indians do without the benefits of this bill, I am sure, than to have the members of this committee, the Members of Congress, or anybody else violate the holy orders of the F. E. P. C., that conglomerate bunch of communistic crackpots who are trying to run this country.

Mr. McCORMACK. Mr. Speaker, will the gentleman yield?

Mr. KEEFE. If the gentleman from Montana will yield to the distinguished majority leader?

Mr. O'CONNOR. I yield.

Mr. McCORMACK. The House has already manifested unanimous consent as to the purpose of this bill. The only question is on agreeing to the Senate amendment which the chairman of the

committee and the gentleman from Wisconsin state carries out the understanding of the Government and brings justice to this group or tribe of Indians.

Mr. KEEFE. That is exactly right.

Mr. McCORMACK. The purpose of this bill is to give them justice. Is that right?

Mr. KEEFE. That is exactly right.

Mr. MARTIN of Massachusetts. Mr. Speaker, I withdraw my reservation of objection.

Mr. KEEFE. Mr. Speaker, I may say I discussed this matter yesterday with the ranking minority member of the Committee on Indian Affairs, the gentleman from South Dakota [Mr. MUNDT], in the absence of the gentleman from Iowa [Mr. GILCHRIST] and it has his full and complete support.

The SPEAKER. Is there objection to the request of the gentleman from Montana?

There was no objection.

The Senate amendments were agreed to.

A motion to reconsider was laid on the table.

HUNGRY HORSE DAM

Mr. O'CONNOR. Mr. Speaker, I ask unanimous consent to take from the Speaker's table the bill (H. R. 3570) to provide as an emergency war project for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes, with Senate amendments thereto, and concur in the Senate amendments.

The Clerk read the title of the bill.

The Clerk read the Senate amendments, as follows:

Page 1, lines 6 and 7, strike out "urgently needed for the war effort."

Amend the title so as to read: "An act to provide for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes."

The SPEAKER. Is there objection to the request of the gentleman from Montana?

Mr. MARTIN of Massachusetts. Mr. Speaker, reserving the right to object, what does the amendment do?

Mr. O'CONNOR. I yield to my colleague the gentleman from Montana [Mr. MANSFIELD].

Mr. MANSFIELD of Montana. Mr. Speaker, this is an authorization for the Hungry Horse Dam on the south fork of the Flathead River in northwestern Montana as a post-war project. I might say to the distinguished gentleman from Massachusetts [Mr. MARTIN] that the bill has already passed the House unanimously.

Mr. MARTIN of Massachusetts. What are the Senate amendments?

Mr. MANSFIELD of Montana. There is only one and that is to make it a post-war project instead of a war emergency project. That is the only difference.

Mr. MARTIN of Massachusetts. You are not going to do it in wartime? It was originally passed as a war measure and now you are going to put it in as a post-war measure?

Mr. MANSFIELD of Montana. No; it was passed with that inclusion in it because of the fact that the Army engineers came into the Flathead last summer and were going to raise our lake to a height of 37 feet eventually, which would have affected 50,000 people directly and indirectly and 50,000 acres of the best land in Montana and inundated numerous towns along the lake and adjacent to it. Because of that we included this as an insurance and as an alternative in case they ever did come in again. We do not know when an emergency will arise, I might say to the gentleman, hence our desire for this bill, no piece of legislation has affected western Montana as this matter now before us for consideration.

Mr. MARTIN Massachusetts. Has this amendment been submitted to the committee?

Mr. MANSFIELD of Montana. Individually, yes; I have contacted the gentleman from Wyoming [Mr. BARRETT], the gentleman from Colorado [Mr. ROCKWELL], the gentleman from Washington [Mr. HORAN], and all the others, and the chairman, the gentleman from Idaho [Mr. WHITE].

Mr. MARTIN of Massachusetts. In other words, this practically postpones the project?

Mr. MANSFIELD of Montana. That is right. I can assure the House that the people of Montana will be deeply appreciative if the Members will consent unanimously to pass the bill, as amended, now before us for consideration.

Mr. MARTIN of Massachusetts. Mr. Speaker, I withdraw my reservation of objection.

The SPEAKER. Is there objection to the request of the gentleman from Montana?

There was no objection.

The Senate amendments were agreed to.

A motion to reconsider was laid on the table.

EXTENSION OF REMARKS

Mrs. NORTON. Mr. Speaker, I ask unanimous consent to extend my remarks in the RECORD and to include two editorials.

The SPEAKER. Without objection, it is so ordered.

There was no objection.

[The matter referred to appears in the Appendix.]

PROGRAM FOR NEXT WEEK

Mr. MARTIN of Massachusetts. Mr. Speaker, I ask unanimous consent to proceed for 1 minute.

The SPEAKER. Without objection, it is so ordered.

There was no objection.

Mr. MARTIN of Massachusetts. Mr. Speaker, I take this time to inquire as to what the program is going to be the rest of this week and next week.

Mr. McCORMACK. The program for today is the further consideration of the appropriation bill now before the House.

If the bill is disposed of today, which I hope, then I will ask unanimous consent that when the House adjourns tonight it will adjourn to meet on Monday next.

On Monday, the Labor Department appropriation bill will be taken up for general debate.

Tuesday is Memorial Day and there will be no legislative business.

Wednesday is the House memorial for our deceased members. Outside of the memorial exercises there will be no legislative business.

On Thursday there will be a continuation of the consideration of the Labor Department appropriation bill, and thereafter, the lend-lease and U. N. R. R. A. appropriation bills will be the next order of business.

I want to make one reservation, that conference reports, of course, might be considered, that are in order next week, but the House will be advised so that the Members will have notice.

Mr. MARTIN of Massachusetts. As I understand, the tentative plans are to meet at 11 o'clock on Thursday?

Mr. McCORMACK. I think so; yes.

Mr. MARTIN of Massachusetts. It might be well to state that so that if the Members are away for Memorial Day they will be aware of that.

Mr. McCORMACK. I think probably we will come in at 11 o'clock some days next week. I do not want to commit myself about Thursday, but I do know that from now on if we are going to dispose of our program by June 20, or thereabouts, we will have to speed up. The House has been doing a mighty good job. We will probably have to sit on Saturdays and come in at an earlier hour on many days between now and June 30.

Mr. COCHRAN. Will the gentleman yield?

Mr. MARTIN of Massachusetts. I yield.

Mr. COCHRAN. As I understand, it has been stated that on Thursday a very important matter is going to come before this House. That is the conference report on the independent offices appropriation bill. There are four or five items of legislation on that appropriation bill that are in disagreement and will have to come back for a vote in the House, including the T. V. A.

Mr. McCORMACK. I would like to inquire from the chairman of the Subcommittee on Appropriations, if it is the intention to bring up the conference report on the Independent offices bill next Thursday?

Mr. WOODRUM of Virginia. The House and Senate conferees have met, and the House conferees have signed a report. The latest information I have is that there is some hesitancy on the part of the gentlemen in the other body, but I believe a report will be filed, and it is my thought at the moment that it would be ready for consideration by Thursday, if the program of the House will permit it.

Mr. MARTIN of Massachusetts. How about the conference report on the Navy Department appropriation bill?

Mr. McCORMACK. I think we might as well clear up some of these conference reports if we can. If the conference report on the independent offices appropriation bill, which involves many items, is ready for Thursday, I think it should be in order on that day.

Mr. WOODRUM of Virginia. It will take about 3 hours.

Mr. McCORMACK. If the conference report is reported in, it will be set down for next Thursday.

Mr. PACE. Will the gentleman yield? Mr. MARTIN of Massachusetts. I yield.

Mr. PACE. Many members are especially interested in the bill providing for school lunches. The conferees are filing their report today.

Mr. McCORMACK. Will that be controversial?

Mr. PACE. In part.

Mr. WOODRUM of Virginia. That is a matter that will have to wait until the latter part of the week.

Mr. TARVER. Will the gentleman yield?

Mr. MARTIN of Massachusetts. I yield.

Mr. TARVER. I think it is a matter of the utmost importance that this conference report on the Pace bill be considered by the House at as early a time as possible, because it involves the school-lunch program and the Farm Security Administration appropriation. The conferees on the Department of Agriculture appropriation bill have deferred further conferences with the Senate until that conference report is acted upon by the House. I sincerely hope that the majority leader may permit its consideration on Monday.

Mr. McCORMACK. What the gentleman says is thoroughly appreciated. I am sure the gentleman realizes that on Monday the Labor Department appropriation bill should be considered for general debate. It is impossible to set down that conference report for Monday. It will be considered as soon as possible after Wednesday.

Mr. MARTIN of Massachusetts. I understand the Navy Department appropriation bill conference report is controversial.

Mr. COCHRAN. The gentleman from California, [Mr. SHEPPARD] this morning received permission to file that conference report before midnight tonight. He told me there was a very controversial amendment which was brought back to the House for a separate vote.

Mr. McCORMACK. Conference reports will not be brought up before Thursday. The Independent Offices appropriation bill conference report will be in order on Thursday. I am not making any commitment about the others now because it is not possible, but I will bring them up as soon as the order of business will permit.

Mr. RABAUT. The State, Justice, and Commerce Departments bill will be ready.

Mr. McCORMACK. I understand the State, Justice, and Commerce Departments bill will be ready. Those matters will be brought up as soon as possible, but none before next Thursday.

The SPEAKER. The time of the gentleman from Massachusetts [Mr. MARTIN] has expired.

Mr. McCORMACK. Mr. Speaker, I ask unanimous consent to proceed for an additional minute.



[PUBLIC LAW 329—78TH CONGRESS]

[CHAPTER 234—2D SESSION]

[H. R. 3570]

AN ACT

To provide for the partial construction of the Hungry Horse Dam on the South Fork of the Flathead River in the State of Montana, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of irrigation and reclamation of arid lands, for controlling floods, improving navigation, regulating the flow of the South Fork of the Flathead River, for the generation of electric energy, and for other beneficial uses primarily in the State of Montana but also in downstream areas, the Secretary of the Interior is authorized and directed to proceed as soon as practicable with the construction, operation, and maintenance of the proposed Hungry Horse Dam (including facilities for generating electric energy) on the South Fork of the Flathead River, Flathead County, Montana, to such a height as may be necessary to impound not less than one million acre-feet of water.

SEC. 2. The Secretary of the Interior is authorized to complete, as soon as the necessary additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

SEC. 3. The Secretary of the Interior is authorized to construct, operate, and maintain under the provisions of the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388 and Acts amendatory thereof or supplementary thereto), such additional works as he may deem necessary for irrigation purposes. Such irrigation works may be undertaken only after a report and findings thereon have been made by the Secretary of the Interior as provided in such Federal reclamation laws; and, within the limits of the water users' repayment ability, such report may be predicated on allocation to irrigation of an appropriate portion of the cost of constructing said dam and reservoir. Said dam and reservoir and said irrigation works may be utilized for irrigation purposes only pursuant to the provisions of said Federal reclamation laws.

SEC. 4. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

Approved June 5, 1944.



HUNGRY HORSE DAM, MONT.

LETTER

FROM

THE SECRETARY OF WAR

TRANSMITTING

THE LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED MARCH 29, 1943, SUBMITTING AN INTERIM REPORT WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON SURVEYS AND STUDIES OF HUNGRY HORSE DAM, MONT., MADE UNDER AUTHORITY OF SECTION 7 OF THE FLOOD CONTROL ACT APPROVED JUNE 22, 1936, AND SUBSEQUENT CORRESPONDENCE IN RELATION THERETO



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1944

HOUSE RESOLUTION NO. 561

[Submitted by Mr. JARMAN]

IN THE HOUSE OF REPRESENTATIVES,
June 5, 1944.

Resolved, That the letter of the Secretary of War, transmitted to the House of Representatives on March 29, 1943, including an interim report from the Chief of Engineers, United States Army, dated August 27, 1941, with accompanying papers and an illustration, submitting surveys and studies of the Hungry Horse Dam, Mont., made under authority of section 7 of the Flood Control Act approved June 22, 1936, and subsequent correspondence in relation thereto, be printed, with an illustration, as a House document.

Attest:

SOUTH TRIMBLE, *Clerk.*
By H. NEWLIN MEGILL.

WAR DEPARTMENT,
Washington, April 6, 1944.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

MY DEAR MR. SPEAKER: Reference is made to the memorandum accompanying my letter of March 29, 1943, transmitting an interim report dated August 27, 1941, from the Chief of Engineers, United States Army, on a survey of the Hungry Horse Dam, Mont., made under provisions of section 7 of the Flood Control Act approved June 22, 1936. In that memorandum it was requested that the accompanying interim report be read only in executive session and that it not be printed during the emergency, nor appear in any record of hearings, the Congressional Record, or other documents open to public inspection, as that report contained information affecting the national defense of the United States.

In accordance with a recent decision of the War Department General Staff regarding the release to the public of material formerly given a high security classification and in accordance with the present policy of the Office of the Chief of Engineers, the confidential classification has been removed from the report on the Hungry Horse Dam, and there is no longer any objection to the printing of this report as a House document.

As soon as notice of the receipt of this communication appears in the Congressional Record, a representative of the Office, Chief of Engineers, will communicate with the Committee on Flood Control of the House of Representatives, for the purpose of physically marking the report of the Chief of Engineers on the Hungry Horse Dam as unclassified material.

Sincerely yours,

HENRY L. STIMSON,
Secretary of War.



HUNGRY HORSE DAM, FLATHEAD RIVER, MONT.

LETTER

FROM

THE SECRETARY OF WAR

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED AUGUST 27, 1941, SUBMITTING AN INTERIM REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON SURVEYS AND STUDIES OF HUNGRY HORSE DAM, MONT., MADE UNDER AUTHORITY OF SECTION 7 OF THE FLOOD CONTROL ACT APPROVED ON JUNE 22, 1936

MARCH 29, 1943.—Referred to the Committee on Flood Control

LETTER OF TRANSMITTAL

WAR DEPARTMENT,
Washington, March 29, 1943.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

MY DEAR MR. SPEAKER: I am transmitting herewith an interim report dated August 27, 1941, from the Chief of Engineers, United States Army, on surveys and studies of Hungry Horse Dam, Mont., made under authority of section 7 of the Flood Control Act approved on June 22, 1936, together with accompanying papers.

The Bureau of the Budget has been consulted and advises in regard to this unfavorable report, that while there would be no objection to the presentation of the proposed report to Congress, the submission during the present emergency of any estimate of appropriation for the project would not be in accord with the program of the President, in the absence of further evidence of the availability for early project construction of a sufficient supply of critical materials, machinery, and manpower.

Attention is invited to the enclosed memorandum regarding the confidential nature of this report.

Sincerely yours,

HENRY L. STIMSON,
Secretary of War.

WAR DEPARTMENT,
Washington, March 29, 1943.

MEMORANDUM FOR THE SPEAKER OF THE HOUSE OF REPRESENTATIVES:

It is respectfully requested that, as the accompanying interim report on surveys and studies of Hungry Horse Dam, Mont., contains information affecting the national defense of the United States, it be read only in executive session and that it not be printed during the emergency nor appear in the record of hearings, the Congressional Record, or other documents open to public inspection. The report comes within the provisions of the Espionage Act and is not to be transmitted to any unauthorized person.

HENRY L. STIMSON,
Secretary of War.

HUNGRY HORSE DAM, MONT.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, August 27, 1941.

Subject: Hungry Horse Dam, Mont.

To: The Secretary of War.

1. I submit for transmission to Congress my report with accompanying papers and an illustration on surveys and studies of Hungry Horse Dam, Mont., made under authority of section 7 of the Flood Control Act approved June 22, 1936.

2. The Hungry Horse Dam site is on the South Fork of Flathead River in northwestern Montana. Flathead River rises in the Rocky Mountains in British Columbia and northwestern Montana and flows south to join Clark Fork, a tributary of Columbia River. The drainage area above the Hungry Horse Dam site is 1,635 square miles. The total drainage area of Flathead River is 9,400 square miles. The headwater areas are rugged and heavily forested. In the vicinity of Flathead Lake in the central part of the basin there are approximately 100,000 acres of bottom and level lands adaptable to farming. The area is sparsely populated. Kalispell, Mont., with 7,000 inhabitants, is the largest community. The principal activities are agriculture and lumbering.

3. The principal flood problem that would be affected by the Hungry Horse project is along the 37-mile reach of Flathead River from the Hungry Horse Dam site to Flathead Lake and around the 122-mile shore line of Flathead Lake. The largest flood of record, in 1894, inundated 51 square miles in this section. In 1933, 34 square miles were flooded. Lesser floods have occurred on an average of once in 3 years. If past floods should recur with the same magnitude and frequency, but under existing conditions of development and land use, flood damages would average \$58,000 annually. The principal damage would be to farms and lumber companies. Existing improvements for flood control consist only of five rock-filled pile jetties for protection of a road and of scattered low dikes built by individuals and groups of farmers. Local interests desire construction of the Hungry Horse project as a multiple-purpose development to provide control of floods and to furnish power for pumping irrigation water and for local and regional consumption.

4. The district engineer has investigated the multiple-purpose possibilities of the Hungry Horse project as well as the relative value of flood control by other means. He finds that the cost of storage at the Hungry Horse site for flood control alone or for flood control in combination with power development would greatly exceed the prospective flood-control benefits. He also finds that flood protection around and above Flathead Lake could be provided more economically

by means of levees than by allocation of storage for flood control in the Hungry Horse project. The Bureau of Reclamation advises that irrigation development in the upper Flathead Valley is not dependent on the Hungry Horse project either for irrigation-water storage or for power for irrigation pumping. Economic justification for the project therefore depends entirely on its value for power development. The district engineer reports that the site is favorable for economical generation of power and that construction of a dam 450 feet high with a power installation of 142,000 kilowatts, all at an estimated cost of \$31,347,000, would be the optimum development as an individual project. A higher dam and larger power installation might be justified if the project were included as part of a system. The district engineer concludes that construction of the project will be economically justified when a demand for the power is fully established. He notes that provisions have been made at the Kerr hydroelectric plant below Flathead Lake for installation of an additional capacity of 56,000 kilowatts when needed and that The Montana Power Co. may purchase power from the Washington Water Power Co., which, in turn, can obtain power from the Grand Coulee development. On the basis of prospective power market information available to him, the district engineer is of the opinion that priority for construction of the Hungry Horse project should be based upon its relative merits compared with other sources of power that might serve the same load centers. He recommends that the project not be undertaken at this time. The division engineer concurs.

5. The Board of Engineers for Rivers and Harbors has reviewed the reports of the district and division engineers and the additional information presented by local interests at a hearing before the Board. It concurs in the views of the reporting officers both as to the lack of flood-control value of the site and as to the greater value of the site for power purposes, but considers that development of the project with a dam 500 feet in height would be preferable and justified economically when a market for the power is established. The Board is of the opinion that the public need for the power to be developed at the site should be the determining factor as to whether the Hungry Horse project is to be undertaken and reports that construction of the project in the interest of flood control under existing Federal laws pertaining thereto is not advisable at this time.

6. The Federal Power Commission advises that it considers the optimum development to be a project with a dam 500 feet in height and a power installation of 172,000 kilowatts; that the power benefits at the site and at existing downstream plants would justify construction of the project at an early date; and that the Hungry Horse project, scheduled for completion in 1946, is included in the program for new generating facilities to meet anticipated defense power loads, as recommended to the President on July 16, 1941.

7. The Office of Production Management advises that in view of the findings set forth in the report of the district engineer it does not consider the Hungry Horse project necessary for the national defense.

8. After due consideration of the reports and of the comments of the Federal Power Commission and Office of Production Management, I concur in the views of the Board. Flood protection in this section can be secured more economically by means other than allocation of storage in the Hungry Horse project. The greatest value

of the site is for prospective power development and a dam 500 feet in height with a power installation of 172,000 kilowatts at an estimated cost of \$39,500,000 will be justified economically when a market for the power is definitely established. I accordingly report that construction of the Hungry Horse project for flood-control purposes is not advisable at this time. In view of the possible importance of the project for power development, I recommend that the report be printed.

J. L. SCHLEY,
*Major General,
Chief of Engineers.*

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

[Second endorsement]

THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., August 11, 1941.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY.

1. Local interests were advised of the nature of the division engineer's report and were invited to submit additional information to the Board. At their request a hearing was held at which they called attention to the changed conditions since the date of the division engineer's report and to the increasing need for power to carry out the national defense program in their section. They urged construction of the project at the earliest practicable time.

2. The Board has reviewed the reports of the district and division engineers and the information presented by local interests. It concurs in the views of the reporting officers that flood protection in this section can be obtained more economically by means other than allocation of storage for that purpose in the Hungry Horse project. The Board also concurs in the view of the reporting officers that the Hungry Horse site presents a favorable opportunity for economical power development, dependent only on an assured market for the power. The optimum development as an individual project would be a dam 450 feet high with a power installation of 142,000 kilowatts, all at an estimated cost of \$31,350,000. As part of an integrated power system a dam 500 feet high with an installation of 172,000 kilowatts at an estimated cost of \$39,500,000 would be justified. The cost of the prime power at 50 percent load factor under the foregoing plans would be 2.40 and 2.56 mills per kilowatt-hour, respectively. The project would be economically justified if a market for the power were assured. The Board notes, however, that substantial amounts of additional power can be more readily obtained in this region by installation of generating facilities at the existing Kerr plant and by purchase from power systems connected to the Grand Coulee development.

3. The Board is of the opinion that the small flood-control benefit obtainable by construction of the Hungry Horse project would not justify its adoption at this time in the interest of flood control as contemplated in the various flood-control acts defining Federal policies with respect thereto and that the advisability of constructing

the project should be determined on the basis of the public need for the power that may be developed.

For the Board:

THOMAS M. ROBINS,
Brigadier General, Corps of Engineers,
Senior Member.

INTERIM SURVEY OF HUNGRY HORSE DAM, MONTANA

SYLLABUS

The district engineer reports that the cost of the proposed Hunry Horse Dam project, if developed for power generation, would be justified by the resulting benefits only if there were a market for most of the power; that damages resulting from floods are not sufficient to justify control by storage, either alone or in conjunction with power; and that irrigation of the upper Flathead Valley is not dependent upon the Hungry Horse project. He shows that existing power facilities are adequate for many years to come and that flood control could be accomplished by means other than storage, and concludes that the project is unnecessary at this time. He therefore recommends that the Hungry Horse Dam be not built at the present time, but that the public lands in the reservoir area be reserved for future storage.

WAR DEPARTMENT,
UNITED STATES ENGINEER OFFICE,
Seattle, Wash., November 30, 1940.

Subject: Interim report on survey of the Hungry Horse project, Montana.

To: The Division Engineer, North Pacific Division, Portland, Oreg.

I. INTRODUCTION AND DESCRIPTION

A. AUTHORITY

1. This interim report on survey of the Hungry Horse project, Montana, is submitted in compliance with the following congressional directives and subsequent departmental instructions:

(a) Act of June 22, 1936 (Public Law No. 738, 74th Cong., H. R. 8455):

SEC. 6. The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys for flood control at the following-named localities * * *:

* * * * *
Columbia River and tributaries, Washington.

* * * * *

SEC. 7. The Secretary of War is hereby authorized and directed to continue surveys, studies, and reports at the following-named localities * * *:

* * * * *
Hungry Horse Dam, Montana.

* * * * *

(b) Resolution of the Committee on Commerce of the United States Senate, adopted April 6, 1937:

That the Board of Engineers for Rivers and Harbors * * * is hereby requested to review the report on Columbia River and minor tributaries, submitted in House Document No. 103, 73d Congress, 1st Session (H. D. 308/69/1 report on Columbia River and tributaries) with a view to determining the advisability at this time of improving Clark Fork of Columbia River, including the stabilization of the level of Lake Pend Oreille, Idaho.

(c) Act of August 28, 1937 (Public Law No. 406, 75th Cong., H. R. 7646):

SEC. 5. That section 6 of the Act * * * approved June 22, 1936, is hereby amended by adding to the list of localities at which preliminary examinations and surveys are authorized to be made the following names:

* * * * *
Flathead River and tributaries in Flathead County, Montana.
* * * * *

(d) Act of June 28, 1938 (Public Law No. 761, 75th Cong., H. R. 10618).

SEC. 6. The Secretary of War is hereby authorized and directed to cause preliminary examinations and surveys for flood control * * * at the following-named localities * * *:

* * * * *
Flathead River and tributaries in Flathead County, Montana.
* * * * *

2. Under dates of December 10, 1937, and August 12, 1938, the Chief of Engineers authorized a combined report on preliminary examination under the above authorities. A joint public hearing was held by the division engineer and the Department of Agriculture in Missoula, Mont., on March 29, 1938. Report on preliminary examination was submitted by the division engineer on October 8, 1938, and on November 23, 1938, the Chief of Engineers ordered a survey and the submission of an interim report covering general engineering studies and extensive field reconnaissance. Under date of May 6, 1939, the Chief of Engineers directed that "the preparation of an interim report on the Hungry Horse project be initiated as soon as funds * * * become available * * *." This interim report is limited in general to a consideration of that portion of the Flathead Basin lying upstream from Flathead Lake and in particular to the Hungry Horse project.

B. SCOPE OF INVESTIGATION

3. The data for this report were obtained from various published and unpublished reports of other agencies, from information furnished by local interests, from a reconnaissance of the Flathead Basin, and from surveys and subsurface explorations at the Hungry Horse Dam site. The dam and reservoir area has been mapped by the United States Geological Survey, and river surveys of other sections of the stream, by the same agency, are available.

C. GENERAL DESCRIPTION

4. Flathead River rises in British Columbia, crosses the international boundary about 20 miles west of the Continental Divide, flows southerly through Flathead County, Mont., receiving the inflow from the Middle Fork and South Fork at about 60 miles and 70 miles south of the international line, and enters Flathead Lake about 33 miles downstream from the mouth of the South Fork. Flathead Lake, which has a surface area of about 118,500 acres, is partially regulated in the interest of the Kerr power plant, located at the outlet near Polson, with an installed capacity of 56,000 kilowatts. Below the lake, the river flows southerly 45 miles, then westerly 25 miles to its confluence with Clark Fork near Paradise, Mont. Clark Fork, below its junction with the Flathead, flows northwesterly through parts of Montana, Idaho, Washington, and British Columbia,

a total distance of 245 miles, to its confluence with the Columbia River in Canada.

5. The Flathead Basin, upstream from Flathead Lake, is largely mountainous, with deeply cut valleys, and is generally covered with a heavy forest growth. Upstream from Columbia Falls the area is practically all in Federal ownership and is very sparsely settled. The upper main stream and the Middle Fork form about 100 miles of the boundary of Glacier National Park, and the remainder of the area is included in Flathead National Forest. The Great Northern Railway and United States Highway No. 2 follow the valley of the Middle Fork, and a secondary road branches from No. 2 at Columbia Falls and extends up the valley of the main stream into British Columbia, but aside from these there are no important transportation routes in the upper basin.

6. Downstream from Columbia Falls, and in the valleys of the tributary streams (Whitefish Creek, Stillwater River, and Ashley Creek) is an area of bottom and level lands, covering approximately 100,000 acres, that is now, or has been, farmed. This area is largely glacial till covered by a veneer of soil and is, therefore, excessively drained except where affected by backwater from Flathead Lake. In general, the depth of soil is least at the upstream end of the valley and greatest in the delta area near Flathead Lake. Although these soils will produce limited crops without irrigation, their full development will require additional water during the growing season.

7. The only towns within the basin, upstream from Flathead Lake, are Kalispell (population 7,000), Whitefish (population 2,500), and Columbia Falls (population 600). Whitefish is a division point for the Great Northern Railway, and is largely supported by the pay roll of that company, but the prosperity of Kalispell and Columbia Falls is dependent upon agriculture and lumbering.

8. Climatological records for the Flathead vicinity cover a fair period, but the number of stations is limited. Temperatures, as in most inland sections along the northern boundary of the United States, vary greatly between the winter low and summer high. Three stations have been maintained in the area, all at approximately the same elevation. The lowest temperature recorded in a 45-year record was -36° . The maximum temperature recorded was 104° . The growing season, between killing frosts, ranges from 35 to more than 200 days and averages about 130 days.

9. Rainfall is generally quite well distributed throughout the year, with a little more than average falling in May and June, and a little less than average in July and August. During winter months, precipitation is mostly in the form of snow. The average annual depth of snowfall is about 52 inches at 3,000 feet above sea level, but probably is much more over higher ground. Table 1 summarizes climatological data for stations in and near the basin.

TABLE 1.—*Climatological data*

Station	Elevation above mean sea level (feet)	Length of record (years)		Mean annual precipitation (inches)	Average annual snow-fall (inches)	Average length of growing season (days)	Temperature, ° F.		
		Temperature	Precipitation				Maximum	Mean	Minimum
Columbia Falls.	3,095	45 (1893-1939)	43 (1893-1939)	20.48	65.2	99	103	44	-36
Kalispell.....	2,956	43 (1897-1939)	43 (1897-1939)	14.47	47.5	148	101	43	-34
Polson.....	2,927	29 (1906-39)	29 (1906-39)	14.56	43.2	140	104	50	-27

10. Fragmentary records of stream flow at various points in the basin are available and indicate that the maximum discharges occur in May or June when the snows are melting in the high mountains. The minimum discharge comes during the period September to March when rainfall is light and little or no snow is melting. Table 2 gives stream-flow data for the more important stations.

TABLE 2.—Stream flow data

	Flathead River near Polson, drainage area 7,010 square miles, 32 years' record (1907-39)			Flathead River at Columbia Falls, drainage area 4,440 square miles, 11 years' rec- ord (1910-17 fragmentary and 1928-30)			Flathead River (North Fork) near Columbia Falls, 1 drainage area 1,620 square miles, 14 years' record (1910- 17 and 1928-39)			Middle Fork Flathead River at Belton, drainage area 900 square miles, 16 years' rec- ord (1910-23 and 1923-33)			South Fork Flathead River near Columbia Falls, drain- age area 1,640 square miles, 28 years' record (1910-39) (1913-28 mostly estimated)		
	Mean discharge, second- feet	Maximum daily discharge		Mean discharge, second- feet	Maximum daily discharge		Mean discharge, second- feet	Maximum daily discharge		Mean discharge, second- feet	Maximum daily discharge		Mean discharge, second- feet	Maximum daily discharge	
		Second- feet	Calendar year		Second- feet	Calendar year		Second- feet	Calendar year		Second- feet	Calendar year		Second- feet	Calendar year
October.....	4, 208	12, 490	1927	2, 754	33, 200	1933	1, 136	4, 040	1914	743	3, 270	1910	1, 003	12, 800	1933
November.....	4, 487	14, 800	1933	3, 597	21, 800	1933	1, 241	5, 400	1910	824	3, 700	1910	1, 153	9, 730	1933
December.....	4, 152	14, 000	1933	2, 762	23, 200	1933	747	2, 240	1932	597	6, 610	1921	923	6, 010	1927
January.....	3, 753	14, 400	1934	2, 351	12, 100	1934	729	1, 930	1935	484	1, 310	1919	859	1, 980	1935
February.....	3, 214	9, 310	1934	2, 199	17, 000	1932	677	3, 980	1932	488	7, 010	1932	754	6, 060	1932
March.....	3, 394	9, 630	1910, 34	2, 857	13, 200	1932	880	3, 980	1932	653	3, 730	1932	984	4, 550	1934
April.....	7, 882	46, 900	1934	13, 913	60, 700	1939	3, 222	19, 000	1934	2, 874	11, 400	1933	4, 567	26, 000	1939
May.....	28, 801	82, 100	1928	36, 271	84, 100	1932	9, 482	23, 500	1938	8, 097	26, 900	1913	12, 490	35, 600	1913
June.....	41, 151	79, 200	1928	30, 732	102, 000	1923	9, 967	29, 500	1916	8, 599	42, 000	1916	11, 790	46, 200	1916
July.....	22, 603	74, 700	1916	9, 665	39, 700	1928	4, 132	21, 800	1916	2, 693	14, 200	1916	3, 480	20, 600	1916
August.....	8, 733	28, 700	1916	3, 465	8, 210	1928	1, 595	3, 700	1916	976	2, 300	1917	1, 215	4, 050	1913
September.....	5, 184	13, 200	1916	2, 276	3, 900	1933	1, 160	5, 620	1916	768	7, 250	1916	897	4, 290	1914
Year.....	11, 501	82, 100	1928	9, 430	102, 000	1923	2, 922	29, 500	1916	2, 321	42, 000	1916	3, 350	46, 200	1916

1 Three-fourths of a mile above junction with Middle Fork.

II. FLOOD CONTROL

A. FLOODED AREA

11. *Extent and character.*—Property on the shores of Flathead Lake is subject to damage by flood waters. Also, upstream from the lake, lands adjoining Flathead River, as far upstream as the South Fork and for a short distance up that stream, have suffered from floods. The greatest area of lands inundated was about 51 square miles in 1894. The most recent large flood was in 1933 when about 34 square miles were inundated.

12. Flathead River leaves Bad Rock Canyon at a point about $1\frac{1}{2}$ miles below the mouth of South Fork. From that point to Kalispell the left bank of the river is high and not subject to flooding. The right bank, although much lower, is subject to flooding only during the very largest floods, and then only to a small extent. The area along the right bank is composed largely of gravel with a thin layer of topsoil. During floods the river water passes through this gravel and raises the water table over a large area of land. At a point about 1 mile above Kalispell the slope of the river begins to decrease. Below Kalispell the river meanders through the flat area between Kalispell and Flathead Lake. In the upper portion of this stretch it flows in several channels but in the lower 10 miles it is confined to a single channel. The banks here are low and steep with but little gravel in evidence. During periods of high discharge the river overflows these low banks and inundates the low lands of the valley. It is in this area that most of the flood damage occurs. Kalispell is subject to very little flood damage, as it is located on higher ground.

13. The area subject to flooding below Kalispell, although appearing level, is uneven, and during the lesser floods only the low places are covered with water. The soil is a sandy silt. None of this land is irrigated. The principal crops raised are hay, mostly alfalfa, and grain, largely wheat. A large part of the low ground is still in brush and small timber.

14. Flathead Lake, with a shore line of 122 miles, exclusive of islands, covers an area of about 118,500 acres, or 185 square miles, at elevation 2,893 feet. As the shores are generally steep, each additional foot rise increases this area by only about 500 acres. Many summer homes have been built along the shores of the lake and on some of the few islands. The town of Polson is at the south end and Somers, a lumber town, is at the northwest corner. There are also a few small villages on the west shore. The east and west sides are hemmed in by rugged terrain, but at the north and south ends the country is comparatively flat.

15. The greatest flood known occurred in June 1894. The lake level reached elevation 2,900 feet, about 4 feet higher than the level attained by any other known flood. The crest flow in Flathead River at Columbia Falls, during that flood, was about 153,000 second-feet.

16. Flood stage on Flathead Lake starts at elevation 2,893 feet (mean sea level, U. S. Geological Survey datum as defined in Federal Power Commission license covering the Kerr project). This is the

upper storage limit set by the Federal Power Commission license granted the Montana Power Co. for its Kerr plant at the outlet of the lake below Polson. At this stage, the natural outflow from the lake at the time of the 1933 flood was about 54,500 second-feet. Whenever the lake reaches elevation 2,893, therefore, and the inflowing streams are carrying in excess of 54,500 second-feet, a rise in the lake stage results. Flathead River contributed about 87.5 percent of the inflow during the flood of 1933. The contributions of other streams are: Swan River 8.8 percent, Whitefish Creek 1.5 percent, Stillwater River 2.2 percent, and Ashley Creek nominal. Flathead River, at bankfull stage, and with the lake stage at or below elevation 2,893, carries about 75,000 second-feet, but when the lake rises above elevation 2,893, this capacity is reduced so that water goes over the banks. The higher the lake, the worse the flood condition above the lake with the same river discharge. In 1894, when the lake reached an elevation of 2,900, the backwater effect extended from the lake to a mile north of Kalispell, and caused the inundation of an area 14 miles long and from 2 to 5 miles wide.

17. *Flood damages.*—No adequate data on past flood damages in the basin are available. In 1939, appraisals were made of the damages that would result, under present conditions and with present land use, from a flood like the one of 1894 (the largest known) and from a flood like the one of 1933, the most recent large flood. The results of those appraisals are summarized as follows:

Area	Flood damages	
	1894 flood ¹	1933 flood ²
Around Flathead Lake.....	\$330,000	\$36,000
Above Flathead Lake:		
Damage to crops.....	323,000	181,000
Other damage.....	278,000	56,000
Total.....	931,000	273,000

¹ Crest stage Flathead Lake, 2,900 feet, crest discharge at Columbia Falls, 153,000 second-feet.

² Crest stage Flathead Lake, 2,896.15 feet, crest discharge at Columbia Falls, 91,200 second-feet.

18. Most of the potential damages around Flathead Lake would be suffered by the Somers Lumber Co. at Somers, with relatively minor losses by other scattered interests. Upstream from the Lake there would be flooding of 16,150 acres of cropped land during an 1894 flood and 8,400 acres of cropped land during a 1933 flood.

19. *Annual damages.*—Using the appraised damages for the two floods, a curve was drawn relating Flathead Lake stage to flood damage (zero damage at stage 2,893 feet) and used to estimate damages that would result under present conditions from a recurrence of all floods since 1907. These estimated data follow:

Year	Elevation, Flathead Lake (U. S. Geological Survey datum)	Total flood damages	Annual damages			Remarks
			Around lake	Above lake	Total	
1894 ¹	2,900	\$931,000	\$6,610	\$12,030	\$18,640	Assumed to occur once in 50 years.
1933	2,896.15	273,000				
1916	2,895.90	243,000				Record period 33 years, 1907-39 in- clusive.
1928	2,895.85	234,000				
1913	2,895.50	193,000				
1927	2,895.20	160,000				
1925	2,894.30	76,000				
1908	2,893.80	41,000				
1921	2,893.70	35,000				
1917	2,893.50	24,000				
1918	2,893.30	13,000				
1909	2,893.20	9,000				
1932	2,892.71	None				
1922	2,892.65	None				
1923	2,892.30	None				
Total, 1907-39		1,301,000	5,240	34,180	39,420	
Total, including 1894		2,232,000	11,850	46,210	58,060	

¹ No record of floods between 1894 and 1908.

20. *Value and productivity.*—The average value of unirrigated, improved lands in the Flathead Valley, exclusive of buildings, is \$40 an acre. The average value of improved lands subject to flood damages is somewhat higher than the average for the valley, but \$75 per acre is the maximum for any one tract. There is only a small area irrigated and it is not in the flood plain. The annual productivity from improved property under conditions likely to result from the adoption of adequate flood-control measures would probably not be increased by any more than the annual damages avoided by those measures, as it is not likely that any higher use would be made of these protected properties. Flooded, improved lands are usually covered only to a shallow depth, not sufficient to float buildings, and usually only a little over the first floor of a farm residence, if it enters the house at all; and the velocity of such waters is small. It is true that in improved areas some lands would be increased in value, but as an offset, others would lose the benefits from shallow flooding or subirrigation, especially if floods were controlled by upstream storage to such an extent as to maintain low flows in the river.

21. There would, however, be some land put to a better use, if protected from flooding, and the resulting higher value would be a direct benefit creditable to control measures. Such land is now in brush or small timber and worth on an average \$5 an acre. Under stream control measures, much of it could be cleared and farmed and it would then be worth on an average about \$65 an acre. Clearing would cost \$30 an acre, so the net increase in value can be placed at an average of about \$30 an acre. The areas thus benefited, with resulting increase in value, are as follows:

	Acres	Increase in value	
		An acre	Total
Floods of 1894 magnitude	2,775	\$30.00	\$83,250
Floods of 1933 magnitude	1,995	28.50	56,858

B. WORK DONE BY LOCAL INTERESTS

22. The only flood-control work done by local interests consists of five rock-filled pile jetties constructed by the county in a bend of the river about 4 miles southeast of Kalispell and some low earth dikes built by farmers along the north shore of Flathead Lake and along the river bank in places below Kalispell. The jetties were built to protect a graveled road near the river bank. The low earth dikes are the results, in some cases, of individual effort and in some cases of unorganized groups of farmers acting together. The floodwaters of 1933 were kept off of several hundred acres by these dikes, which were barely high enough for that purpose. In a flood like that of 1894, none of these dikes would keep out the water. Some highway fills across low places would act as effective barriers for isolated small tracts.

C. PROPOSED MEASURES OF RELIEF

23. *Hearing.*—At a public hearing held in Missoula, March 29, 1938, local interests expressed a desire that a dam at the Hungry Horse site, about 4 miles above the mouth of the South Fork at Flathead River, be built to alleviate flood conditions, to furnish storage and power for pumping irrigation water, to produce power for local and regional consumption, and to increase power at sites downstream by regulating the flow of water released from the storage.

24. *Storage.*—Control of a flood like that of 1933 would require storage of 830,000 acre-feet of water above Columbia Falls. Control of a flood like that of 1894 would require a storage of about 3,000,000 acre-feet. From high-water marks it is known that during the flood of 1894 Flathead Lake reached elevation 2,900, and the crest discharge of the river at Columbia Falls was about 153,000 second-feet. These are to be compared with lake level of 2,896.15 and crest river flow at Columbia Falls of 91,200 second-feet in 1933. Records disclose that in 10 years out of the 33 years from 1907 to 1939 the level of Flathead Lake exceeded flood stage of 2,893 feet. Table 3 summarizes these data.

25. The 1894 flood is known to have been greater than any since that year, and is listed as No. 1 above. Next in order is 1928, followed by 1933, when the crest outflow from the lake was 77,400 second-feet and the lake reached elevation 2,896.15.

26. An analysis of the 1933 flood shows that the total amount of inflow to Flathead Lake in excess of 54,500 second-feet during that flood while the lake stood above elevation 2,893 was 416,330 second-foot days, and extended over a period of 18 days, from June 6 to June 23, inclusive. This quantity, which is equivalent to about 830,000 acre-feet, is the measure of flood control required under present conditions, during a flood equal to that of 1933, to keep the lake at or below elevation 2,893 and Flathead River within its banks. At Kerr (Polson) Dam, completed in 1938, 5 miles below the outlet of the lake, the spillway capacity when the lake level is at elevation 2,893 is about 56,000 second-feet. With the lake at elevation 2,893 feet and with the natural discharge of 54,500 second-feet, the drop from the lake to the dam is about 9.8 feet.

TABLE 3.—Flathead Lake flood data

Date ¹	Outflow			Inflow			
	Flathead River mean discharge 12 miles below Polson		Elevation Flathead Lake (U. S. Geological Survey datum)	Flathead River and branches above lake, crest discharge c. f. s.			
	Order of size	Cubic feet per second		Main river at Colum- bia Falls	South Fork 2 miles above mouth, 1,640 square miles	North Fork mouth, 1,620 square miles ²	Middle Fork at Belton, 900 square miles
1894.....	1	115,000	2,900	153,000			
1928, May 29.....	2	82,100	2,895.85		34,100		
1933, June 19.....	3	76,600	2,896.15	91,200	36,800	24,400	23,400
1913, June 12.....	4	75,400	2,895.50		39,000	23,800	26,900
1927, June 19.....	5	75,000	2,895.20		38,800		
1916, July 4 and 5.....	6	74,700	2,895.9		46,200	29,500	49,000
1925, May 25.....	7	67,300	2,894.05		23,200		
1908, June 12.....	8	62,100					
1921, June 11.....	9	62,000	2,893.7				21,500
1917, June 23.....	10	59,100	2,893.5			24,900	20,800
1909, June 23.....	11	58,800	2,893.2				
1918, June 20.....	12	58,400	2,893.3				22,300
1922, June 10.....	13	56,400	2,892.5	82,200			22,100
1923, June 15.....	14	55,900	2,892.3	³ 102,000	³ 9,400		³ 10,500
				⁴ 81,000	⁴ 22,400		⁴ 16,500
1932, May 25.....	15	51,200	2,892.71	89,800	30,300	21,200	25,200

¹ Month and day apply only to outflow 12 miles below Polson and gage reading at lake; not to inflow.

² Three-fourths of a mile above junction with Middle Fork.

³ June 5, 1923.

⁴ May 26, 1923.

27. *Source of floods.*—For Flathead River at Columbia Falls and for the three forks that form it, the available records show averages as follows:

Item	Drainage area at gaging station, square miles	Mean discharge, cubic feet per second			Mean annual run-off, acre-feet
		Daily	Crest	Maximum day	
South Fork.....	1,640	3,350	27,000	23,900	2,425,000
Flathead River (North Fork) ¹	1,620	2,920	18,900	17,300	2,115,000
Middle Fork.....	900	2,320	19,200	18,500	1,680,000
Total.....	4,160	8,590	65,100	59,700	6,220,000
Flathead River at Columbia Falls.....	4,440	9,430	64,600	62,400	6,827,000
Difference.....	280	840		2,700	607,000

¹ Three-fourths of a mile above junction with Middle Fork.

28. The gage at Belton on the Middle Fork is about 5 miles above its junction with Flathead River (North Fork) and above where the Lake McDonald drainage enters Middle Fork, so that 90 percent of the inflow between the tributary gages and Columbia Falls is assignable to Middle Fork, giving for Middle Fork at mouth:

Item	Drainage area at gaging station, square miles	Mean discharge, cubic feet per second			Mean annual run-off, acre-feet
		Daily	Crest	Maximum day	
Middle Fork at mouth.....	1,150	3,080		20,900	2,223,000

29. It is apparent from these data that of the three forks, the South Fork has the greatest annual run-off and crest discharge. Of the other two, Middle Fork has the greater run-off and crest discharge. The drainage area of Flathead River above Middle Fork (locally known as North Fork) is much less rugged than that of the Middle Fork.

30. For storage purposes, there are two favorable sites. One is the Hungry Horse site on South Fork and the other is the Glacier View site on Flathead River (North Fork). Descriptions of both these sites, followed by details of the cost and operation of dams for control of floods, are given in succeeding paragraphs.

31. *Hungry Horse Dam site.*—The Hungry Horse Dam site is near the center of sec. 21, T. 30 N., R. 19 W., M. P. M., 4 miles upstream from the mouth of the South Fork, and about $3\frac{1}{2}$ miles above the bridge on United States Highway No. 2.

32. A forest trail now leads from the bridge to the site along the left bank of the stream. If construction of a dam were undertaken, a railroad spur about $5\frac{1}{2}$ miles long from Coram, on the main line of the Great Northern Railway, could be constructed on an easy grade to South Fork and thence up the right bank of that stream to the dam site at elevation 3120 (mean sea level, U. S. Coast and Geodetic Survey datum). Some heavy construction in earth would be encountered in sections 4 and 5 along Flathead River and in solid rock in sections 16 and 17. An alternate route to attain greater elevation at the dam site is by way of Lion Lake, elevation 3,452, but adequate terminal space would be lacking.

33. A road about $2\frac{3}{4}$ miles long, beginning at a point about 1 mile east of the South Fork bridge on United States Highway No. 2, would be required. About three-fourths of a mile of this distance would be along a steep, solid rock hillside, where one cut of sufficient width could serve both railroad and highway.

34. There are telegraph and telephone lines along the Great Northern Railway. Electric power is now produced at Big Fork, at the mouth of Swan River, with a plant capacity of about 4,150 kilowatts to supply Kalispell and Whitefish. This system is tied in to the Kerr plant at Polson by a small-capacity line. Distribution lines have also been installed under the Rural Electrification Administration in a large part of the Flathead Valley, and one extension of this system follows along United States Highway No. 2 to Belton.

35. There is a suitable camp site in a fairly level area 400 acres or more in size on the right bank about 2 miles below the dam site. A small area of about 15 acres suitable for terminal yards and construction buildings, and perhaps permanent buildings, is located just below the dam site on the right bank at elevation 3,120. There are other small areas suitable for building locations a mile or more below the dam site on both banks of the stream. A road might also be built on the left bank from United States Highway No. 2 to within a mile of the dam where the solid rock rises steeply from the river, and then across the river to the right bank. Other things being equal, however, the right bank is preferable for both buildings and roadways, because the left bank is in the shadow of high mountains much of the winter and is therefore more subject to snowslides and rolling boulders.

36. The dam site is in a canyon of solid rock, of an impure limestone formation, rising on fairly uniform slopes averaging about 32° from horizontal. The strike is parallel with the stream and the average

dip is 25° in a direction varying from N. 40° E. to N. 60° E. The bottom has two V-shaped channels with a narrow rock ridge about 100 feet high between them. In the upper part of the area the stream is in bare rock in the right channel, whereas the left channel is almost entirely filled with stream deposits. In the lower part of the area the left channel is in bare rock and the right channel has been completely filled. Between these two areas the stream has cut a channel through the rock ridge, making a reverse turn in doing so.

37. The dam site and the reservoir area have been examined by Geologists C. E. Erdmann and B. E. Jones and others of the United States Geological Survey. In Erdmann's report it is stated that "a low saddle in the drainage-divide of the reservoir limits the maximum possible height of dam to 630 feet above foundation, but other considerations limit the practical height to 500 feet (high-water flow line elevation 3,540 feet)." A straight concrete gravity-type dam is the one best adapted to prevailing conditions. Data on the reservoir area follow:

Height of dam	Pool elevation	Water surface (acres)	Length of lake formed (miles)
300 feet.....	3,340	6,000	24
400 feet.....	3,440	12,000	32
500 feet.....	3,540	21,000	40

38. The entire reservoir area is in the Flathead National Forest. It is covered with pine, spruce, larch and fir, except in large tracts where fire has destroyed the stand. There is considerable marketable timber, estimated by the Forest Service as follows:

Pool elevation	Thousands of feet board measure	Salvage value
3,340 feet.....	55,000	\$64,650
3,440 feet.....	94,000	109,000
3,540 feet.....	180,950	209,450

39. Southerly from United States Highway No. 2 bridge over South Fork for about 1½ miles, the land is largely privately owned and but little improved. Upstream from this privately owned land the area forms part of the Flathead National Forest and contains only a few small buildings. There are no other improvements excepting the Forest Service trail.

40. *Glacier View Dam site* (see par. 90).—The Glacier View Dam site is in sec. 22, T. 33 N., R. 20 W., on Flathead River (North Fork) about 15 miles above its confluence with Middle Fork, and about 1½ miles above the mouth of Big Creek.

41. A secondary graveled road leads from the town of Columbia Falls northerly about 9 miles through a gap in the mountains to Flathead River (North Fork), and thence continues upstream on the right bank past the dam site and on into Canada. A branch road leads across the river about 15 miles above the dam site, meeting the Belton to Canada road on the left bank of the stream in Glacier Park.

42. If a dam were to be constructed at this site and a railroad were necessary, it could be constructed along a route closely paralleling the highway from Columbia Falls. There are not sufficient data available to make a very close estimate of cost. In 1926, in connection with a proposed pulp development, the Forest Service estimated the cost of a line 28 miles long to a point about 6 miles beyond the dam site, at \$532,000, including steel, or an average of \$19,000 per mile.

43. The only existing wire line is a Forest Service telephone line that follows generally along the highway. It would be necessary to construct power lines from the Kalispell area to the site if electric power were wanted for construction or operation.

44. Suitable space exists for temporary camp construction about one-half mile downstream from the dam site. A camp site of considerable size is available at the Big Creek Forest Service ranger station about 1½ miles downstream from the dam site.

45. The dam site is in a canyon with solid rock sides, partly covered by talus and alluvium, and having a flat, gravelly bottom about 800 feet wide. Depth to bed rock in the river bottom is probably a hundred feet or more. The sides rise generally on an angle of about 30° from horizontal, excepting in a short stretch where the right bank rises steeply, in some places vertically, from just above the highway. This appears to be the best location for a dam to develop the large potential storage on Flathead River (North Fork).

46. Owing to the probable great depth to a suitable foundation for a concrete dam, an earth dam is indicated at this site. A spillway could be obtained at considerable cost by cutting through the rock, probably on the right bank. Area-capacity data for the reservoir follow:

Height of dam	Elevation of pool	Storage capacity	Water surface	Length of lake formed
	<i>Feet</i>	<i>Acres-feet</i>	<i>Acres</i>	<i>Miles</i>
263 feet.....	3,555	1,160,000	13,000	18
363 feet.....	3,654	2,910,000	22,600	25
428 feet.....	3,719	4,600,000	29,300	29
674 feet.....	3,965	-----	-----	To Canada

47. Nearly all the reservoir area is covered with forest growth. Much has been burned over and now has a thick stand of young trees. As on South Fork, there is but little outcropping rock, which makes the relocation of roads easy. The valley is much wider than are the valleys of South or Middle Forks, and it furnishes excellent winter grazing grounds for wild life of Glacier National Park.

48. The Flathead River (North Fork) above its confluence with Middle Fork is the westerly boundary of Glacier National Park. A few ranchers own land within the park. On the right bank a large part of the land has passed to private ownership—some in ranches, some in timber holdings, and a considerable area for the coal it contains. The Flathead National Forest includes perhaps 15 percent of the reservoir area on the right bank and all the land for about 7 miles on the right bank below the dam site. Buildings are widely scattered and the land but little improved.

49. *Comparison of Hungry Horse and Glacier View sites.*—An analysis was made of the effect of storage in Hungry Horse Reservoir on the 1933 flood. This analysis shows that, had the reservoir been

in operation during that flood, there would have been a total inflow into Flathead Lake above the outlet capacity at lake stage 2,893, of 49,620-second-foot days. This inflow would have raised Flathead Lake by only 4 inches above flood stage. The crest discharge of Flathead River on June 16 would have been reduced from 91,200 second-feet (as shown in table 3) to 54,700 second-feet; i. e., 91,200 minus the 36,500 second-feet detained in Hungry Horse Reservoir.

50. A reservoir at the Hungry Horse site on South Fork, built for flood-control purposes only, large enough to store 800,000 acre-feet and thus almost completely control a flood like that of 1933, would have a pool elevation of 3,378 feet, with a dam 348 feet high. Such a dam would require about 1,250,000 cubic yards of concrete and cost about \$14,000,000, exclusive of the reservoir area.

51. Annual costs of such a dam at only 4 percent would be \$560,000. Annual benefits, exclusive of those below Flathead Lake, would be the elimination of damages from all but the 1894 flood, reduction of damages from that flood and realization of increase in land values and would amount to \$50,200. The project, therefore, from an exclusively flood-control viewpoint, is not economically justifiable.

52. A study of a multiple-purpose project for flood control and power indicates that 400,000 acre-feet of top storage for flood control at an estimated incremental cost of \$4,000,000 over the cost of the power features would serve the same purpose as 800,000 acre-feet in a reservoir entirely for flood control. This is made possible by the nature of floods in this vicinity. They always occur during the period May 15 to July 15. As stream flows are low in the fall, winter and early spring, the pool level of a multiple-purpose reservoir would normally be at its lowest stage just before a flood. After a flood there would be no reason to waste stored water, but rather to save it to produce power. The top 800,000 acre-feet of storage space, therefore, would benefit both power and flood control—perhaps an equal amount each. Annual costs for this 400,000 acre-feet of flood storage at 4 percent would be \$160,000. Annual flood benefits, exclusive of those below Flathead Lake, would, as before, be \$50,200. Hence, even such a project, from the flood-control viewpoint, is not economically justifiable.

53. A dam at Glacier View site on Flathead River (North Fork) could afford less control of the main stream than one at Hungry Horse. Whereas 800,000 acre-feet of storage at Hungry Horse would almost completely control the 1933 flood, Glacier View could have stored only 530,000 acre-feet (the total run-off for the same period). For storage of 530,000 acre-feet at Glacier View, a dam about 202 feet high would be required, and pool elevation would be 3,494. Such a dam would require about 3,600,000 cubic yards of earth fill, which, with a spillway of 150,000 second-feet capacity, would cost about \$7,600,000, exclusive of the reservoir area.

54. Annual costs of the 202-foot dam, at only 4 percent, would be \$304,000. Annual benefits, exclusive of those below Flathead Lake, would be considerably less than the \$50,200 that could be produced by a Hungry Horse Dam. The project, therefore, from an exclusively flood-control viewpoint, is not economically justifiable.

55. Storage of 800,000 acre-feet at Glacier View in a reservoir exclusively for flood control, could serve no more purpose in controlling a flood of 1933 proportions than storage of 530,000 acre-feet. But for

a cost comparison of storage of 800,000 acre-feet at this site and equal storage at Hungry Horse, it is estimated that a dam at Glacier View for this purpose would be about 232 feet high and pool elevation would be 3,524 feet. Such a dam would require about 5,000,000 cubic yards of earth fill, which, with a spillway of 150,000 second-feet capacity, would cost about \$8,700,000, exclusive of the reservoir area. On the basis of annual charges and annual benefits this 232-foot project is still less justifiable. Top storage of 400,000 acre-feet behind the most economical 420-foot multiple-purpose dam as discussed later would cost \$2,000,000. Annual costs at 4 percent would be \$80,000. As annual benefits would be much less than \$50,200, flood control storage in such a multiple-purpose project, from an exclusively flood-control viewpoint, is not economically justifiable.

56. To control a flood like that of 1894 would require storage at both sites. With a total required storage of 3,000,000 acre-feet, about four-sevenths, or 1,710,000 acre-feet, would be required on South Fork and about three-sevenths, or 1,290,000 acre-feet, on Flathead River (North Fork).

57. A dam to store this amount on South Fork at Hungry Horse site would be about 432 feet high and have a pool elevation of 3,462 feet. Such a dam would require about 2,240,000 cubic yards of concrete and cost about \$25,000,000, exclusive of the reservoir area.

58. At Glacier View site on North Fork, the pool elevation would be 3,564 feet and the dam would be about 273 feet high. Such a dam would require about 7,300,000 cubic yards of earth fill, which, with a spillway of 150,000 second-feet capacity, would cost about \$10,500,000, exclusive of the reservoir area.

59. These joint costs of \$35,500,000 at 4 percent would amount to an annual cost of \$1,420,000. Annual benefits, exclusive of those below Flathead Lake, would be complete elimination of flood damages and realization of increase in property value and are estimated to be \$63,000, and the project would not be justifiable.

60. *Diversion*.—There is no reasonable method of diverting flood waters to relieve flood conditions.

61. *Levees, revetment*.—As previously stated (see par. 22) some levee and revetment work has been done by local interests. The levees proved of value during the 1933 flood. A complete system of levees similar to those already constructed could be built to give almost complete protection from floods of 1894 magnitude in the farm area north of the lake and below Kalispell. Above Kalispell, however, the levees would serve only to keep the stream within its banks and there would still be some damage caused by ground water coming up from below into the fields through the gravelly soil. Levee construction would be impracticable around Flathead Lake, excepting at the Somers Lumber Co.'s plant at Somers.

62. It is estimated that a total of \$232,000, or 98 percent of the total damage from a 1933 flood, could be prevented above the lake by levees built to protect only against such a flood. Full protection for the Somers Lumber Co.'s plant would prevent damages of \$17,000, which is 47 percent of the total around the lake. The grand total of damages prevented would be \$249,000, or 91 percent, whereas damages not prevented would amount to \$24,000. Such levees would afford no protection against an 1894 flood.

63. To protect against a 1933 flood, it would be necessary to acquire about 490 acres of right-of-way, clear and grub about 245 acres, and construct about 27 miles of new levee, with an average height of about 10 feet. In addition, the existing levees should be raised and widened and it would be necessary to acquire an additional 150 acres of right-of-way, clear and grub about 75 acres, and rebuild about $8\frac{1}{2}$ miles of levee, with an average height of about 8 feet. Dikes with a top width of 12 feet, side slopes 1 on 3 on the river side and 1 on 2 on the landward side are estimated, on the basis of present inadequate data, to cost \$657,000. The annual costs and benefits are derived as follows:

Federal investment:

First cost.....	\$657, 000
Interest during construction, \$657,000, 1 year at 3 percent (construction period 2 years).....	19, 710
Value of Federal properties destroyed or damaged.....	0

Net Federal investment.....	676, 710
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Federal annual charges:

\$676,710 at 3.5 percent.....	23, 685
Amortization of \$676,710 (50-year life, $3\frac{1}{2}$ percent; rate 0.76 percent).....	5, 140
Cost of maintenance and operation ($1\frac{1}{2}$ percent).....	10, 150

Net Federal annual charges.....	38, 975
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Average annual benefits:

Average annual flood damages prevented.....	35, 960
Increased land values resulting from flood protection, \$56,858 at 6 percent.....	3, 410

Annual benefits.....	39, 370
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This preliminary investigation shows that the ratio of annual costs to annual benefits is thus \$38,975 : \$39,370 or 1:1.01 and that the project is therefore barely justified, but a careful survey might materially change this conclusion.

64. It is estimated that a total of \$527,500 or 89.4 percent of the total damage above the lake from a flood of 1894 proportions could be prevented by levees. Full protection for the Somers Lumber Co.'s plant would prevent damages of \$206,000, which is 62.5 percent of the total around the lake. The grand total of damages prevented would be \$743,500 or 79.8 percent, whereas damages not prevented would amount to \$188,000.

65. To protect against an 1894 flood, it would be necessary to acquire about 945 acres of right-of-way, clear and grub about 475 acres, and construct about 52 miles of levee. Even with top width of only 10 feet, side slopes of 1 on only $1\frac{1}{2}$, average height about 14 feet, the levee would average about 17 cubic yards per linear foot. The first cost of such a project is, roughly, \$1,415,000. Annual charges would be \$92,560 and annual benefits \$55,600. The ratio of annual costs to annual benefits is thus 1:0.60 and the project is therefore not justified.

66. The effect of holding Flathead River between levees would be to reduce the natural valley storage upstream from Flathead Lake but even in a flood like that of 1894 the reduction in valley storage would probably not raise Flathead Lake more than one-half foot and hence would not increase the flood outflow enough to adversely affect any downstream areas.

67. *Channel improvement.*—It is not considered necessary or feasible to enlarge, straighten or otherwise improve the channel of Flathead River above the lake. The lower reaches are now ample to carry 75,000 second-feet if the lake is at or below elevation 2,893. The upper reaches will also carry that amount of water. The constantly changing gravel bed would render maintenance of an improved channel very expensive.

68. The outlet of Flathead Lake could be improved. As mentioned previously, the outlet is constricted so that with the lake at elevation 2,893, the outflow amounted, before the building of the Kerr (Polson) Dam, to about 54,500 second-feet. Records kept at the dam since construction indicate that the outflow at flood stages has not been affected. The constricted section extends downstream from the Polson bridge at the lake for a distance of about 7,700 feet with a fall of about 9 feet.

69. The Federal Power Commission license for the Kerr Dam provides for tentative regulation of the lake level between elevations 2,883 and 2,893, subject to the revision of these elevations somewhere between elevations 2,880 and 2,893, provided only that the limits shall be sufficient to furnish 1,100,000 acre-feet of storage. About 10 feet of range in the lake level is sufficient for this purpose.

70. Assuming that the limits remain fixed between elevations 2,883 and 2,893, and that the lake was at elevation 2,893 before a flood like that of 1933 began, it would require the excavation of 4,000,000 cubic yards to discharge sufficient water to keep the lake from rising. It would require excavation of over 10,000,000 cubic yards to pass the crest of the 1894 flood without a rise above elevation 2,893 feet. Still assuming that the lake level was at elevation 2,893 when a flood equal to that of 1933 began, excavations of less than the above amounts would give the following results:

Excavation	Enlarged outlet capacity	Rise in lake level from 2,893 to—
	<i>Cubic feet per second</i>	
1,000,000 cubic yards.....	83,500	2,893.8—
826,000 cubic yards.....	80,000	2,894.0—
540,000 cubic yards.....	75,000	2,895.0±

71. But if the lake level were at 2,890 when such a flood began, excavation of 540,000 cubic yards would probably suffice to keep the Lake from rising above elevation 2,893. Also the excavation would result in reducing the present fall in water surface of about 9 feet between the lake and the dam when all gates are open, to about 7 feet, thus either increasing the power head at the dam by 2 feet, or enabling the power company to get the same head as before with the lake level about 2 feet lower. The present installation of the plant is one unit with a capacity of 56,000 kilowatts. The head is 185 feet, using 4,000 second-feet. A substructure has been constructed for a second unit of the same size.

72. There are not sufficient data available to estimate closely the cost of excavation of the lake outlet. The extent of the solid rock area is not known. But assuming a unit cost of \$4 a cubic yard, the cost of

540,000 cubic yards would be \$2,160,000. At 4 percent, annual costs would be \$86,400. The annual flood benefits to areas above the lake cannot exceed \$50,000. Therefore, on this basis the work could not be justified. The effect of routing floods through Flathead Lake without any storage therein of floodwaters would be to increase the flood flows at all downstream points, which would be viewed with alarm by all downstream interests.

III. POWER

A. EXISTING PLANTS

73. Two power sites have been developed in the Flathead River Basin, both of which are in the vicinity of Flathead Lake. One small power plant owned by Mountain States Power Co. and having a capacity of about 5,000 kilovolt-amperes is located at Big Fork on Swan River, a short distance upstream from Flathead Lake. The reservoir capacity is 650 acre-feet and the head is 103 to 105 feet. Water rights are claimed for 1,000 second-feet, although the maximum required is 630 second-feet and the minimum available is 280 second-feet. The plant is equipped with a 750-kilovolt-ampere generator driven by a 1,340-horsepower wheel and with two 2,125-kilovolt-ampere generators each driven by a 2,400-horsepower wheel. The company rates the plant at 4,150 kilowatts.

74. The second plant, known as the Kerr plant of the Montana Power Co., is located on Flathead River about 5 miles downstream from Flathead Lake. The concrete arch dam for this plant is 204 feet high, 800 feet long on top, and backs water into Flathead Lake. Regulation of the lake between elevations 2,883 and 2,893 (U. S. Geological Survey datum) provides 1,200,000 acre-feet of storage. The maximum head developed at the powerhouse through a 28-foot tunnel 800 feet long is 189 feet. In the powerhouse, a 77,000 horsepower Francis type vertical turbine drives a 13,800-volt, 56,000-kilowatt generator at 112.5 revolutions per minute. An additional installation of 77,000 horsepower and 56,000 kilowatts will be made when needed. Some work has been done on the second 28-foot tunnel and the foundation for the additional generator and turbine has been built to above water level.

75. The Kerr plant designated as project 5 was licensed by the Federal Power Commission in accordance with the Federal Water Power Act of June 10, 1920 (41 Stat., 1063) and under specific authorization by Congress (45 Stat., pp. 212, 213) approved March 7, 1928. The license was originally issued to the Rocky Mountain Power Co. and made effective May 1, 1928, but it was later transferred by amendment to The Montana Power Co.

76. Regulation requirements of Flathead Lake are quoted from amendment No. 6 of the license as follows:

ARTICLE 23. The licensee may regulate Flathead Lake between elevations 2,883 and 2,893: *Provided, however,* That the Commission retains the right finally to define limits of such regulation between elevations 2,880 and 2,893, after the beginning of commercial operation of the project, in such manner as will make not less than 1,100,000 acre-feet of storage capacity available to the licensee, it being expressly understood that licensee shall not be restricted to less than 10 feet between the minimum and maximum elevations within which to carry on its regulation of Flathead Lake, and that prior approval by the Commission of spillway gates having a crest elevation of 2,896 does not authorize

any higher controlled water level than that which has heretofore been authorized or which may be hereafter authorized by the Commission under this article.

77. Water rights acquired through the license are held subject to rights reasonably necessary for development of irrigable land, domestic water supply, and water power possibilities in the watershed above the project works as stipulated in the following articles of the license:

ARTICLE 21. The operations of the licensee, insofar as they affect the use, storage, and discharge from storage of the water of Flathead Lake, shall at all times be controlled by such reasonable rules and regulations as the Secretary of War may prescribe in the interests of navigation, and as the Federal Power Commission may prescribe in the interest of flood control and of the fullest practicable utilization of the waters of Flathead River and Clark Fork for power, irrigation, and other beneficial public uses.

ARTICLE 22. The licensee agrees that all rights acquired in connection with the project covered by this license and the use of water for the development of power shall be held subject to the rights which may be reasonably necessary for the complete development of irrigable land, the domestic water-supply requirements, and the water-power possibilities, in the watershed above the project works. The licensee further agrees to waive objections to the subtraction of such water up to a maximum flow of 200 cubic feet per second, as may be authorized under either Federal or State authority for diversion out of the watershed above the project works.

B. PROPOSED PLANTS

78. *Power market.*—For the purposes of this report, power has been evaluated on the basis of Bonneville rates at the site—\$14.50 a kilowatt of prime demand a year and \$9.50 a kilowatt-year for secondary power. The assumption has been made that an average load factor of 50 percent would obtain and the contemplated installation has accordingly been made equal to twice the prime power. The resulting rate used for prime power at 50 percent load factor is therefore \$29 a kilowatt-year. Secondary power has been evaluated at \$9.50 a kilowatt-year.

79. *Undeveloped sites.*—There are a number of sites on the main stream and on Middle Fork at which low head, run of stream plants could be constructed. These sites include, on the main stream, Fool Hen Hill site, upper Canyon Creek site, lower Canyon Creek site, Coram site, Bad Rock Canyon site, and Columbia Falls site; and on Middle Fork, Bear Creek site, upper Belton site, and lower Belton site. Because of the fluctuations in the flow of Flathead River none of these plants would be of great value unless upstream storage were provided. There are only two sites on the river at which large amounts of storage could be developed without extensive reconstruction of transportation routes: the Hungry Horse site on South Fork and the Glacier View site on the upper main stream. Detailed descriptions of these sites are given in following paragraphs. Almost 2,000,000 acre-feet of storage could be provided on the Middle Fork by a dam near Belton, but such storage would involve relocation of 25 miles of the Great Northern Railway main line and of 17 miles of main highway. These relocations alone would cost over \$7,000,000, and consequently no further consideration is given to that site in this report.

80. *Hungry Horse site.*—This proposed project is located on the South Fork of Flathead River about 4 miles above its mouth. It appears to be feasible to construct a dam in this vicinity to a height of about 500 feet above the river bed. A number of dam sites have been proposed in this vicinity but only detailed investigations and studies will determine the relative economy and desirability of the various sites. The site reported on herein has been investigated sufficiently

to establish the reliability of the foundation for the proposed structures and to provide a safe basis for the cost estimates.

81. The geological formation involved has been identified by geologists of the United States Geological Survey as the Siyeh limestone of the Belt series of sediments. The rock itself is a resistant, gray limestone, in which the calcium carbonate has been partially replaced by the less soluble magnesium carbonate, forming a Dolomitic limestone. Two major systems of cleavage are present: The bedding, which dips approximately 25° to the northeast, and the jointing, which is roughly perpendicular to the dip. In addition, numerous pressure cracks caused by ice pressure during glaciation penetrate to depths of 20 feet into the side walls and to 60 feet in the valley bottom. Eleven core drill holes were put down to depths of from 30 to 150 feet, aggregating a total of 862 linear feet. The worst rock conditions were encountered in the valley bottom, where ground-water action has leached out pressure cracks into open seams; and on the east-side wall, where vertical scarps have been formed by slumping off of large sections of rock.

82. As studies indicate that flood control can be obtained at less cost by other means than by storage at Hungry Horse and that irrigation cannot be related to storage at Hungry Horse Reservoir so as to reduce the cost, the development of the site has been studied on a basis of power production alone. Table 4 gives a comparison of estimated costs, annual charges, annual power values, and net benefits for power development only, for various heights of dams. The estimates of costs given are for Federal construction, and the value of power shown is for power generated at this site only and does not include benefits to be derived from additional prime power made possible by increased downstream low-water flow. As an individual development these studies indicate that the most economical height of dam would be about 450 feet. If included in a system of power developments it is probable that a slightly higher dam might be found the most economical.

TABLE 4.—Comparison of developments for various heights of Hungry Horse Dam

Item	Scheme I	Scheme II	Scheme III	Scheme IV	Scheme V
Height of dam above river bed, feet.....	300	350	400	450	500
Maximum power storage elevation.....	3,325	3,375	3,425	3,475	3,525
Gross storage, acre-feet.....	447,000	774,000	1,237,000	1,888,000	2,770,000
Draw-down, feet.....	105	120	145	150	155
Usable storage, acre-feet.....	357,000	606,000	991,000	1,441,000	2,033,000
Regulated flow, cubic feet per second.....	1,196	1,691	2,357	2,694	2,888
Installation at 50 percent load factor, kilowatts.....	40,200	67,600	108,000	142,000	172,000
Cost estimates:					
Dam.....	\$9,238,000	\$13,756,000	\$18,846,000	\$24,412,000	\$31,288,000
Reservoir.....	675,000	950,000	1,345,000	1,883,000	2,375,000
Powerhouse.....	2,053,000	2,943,000	4,156,000	5,052,000	5,796,000
Total.....	11,966,000	17,649,000	24,347,000	31,347,000	39,459,000
Total annual charges.....	607,500	897,200	1,256,200	1,624,800	2,041,600
Total annual power value (includes secondary power).....	658,900	1,094,200	1,699,000	2,192,000	2,608,000
Net benefit.....	+51,400	+197,000	+442,800	+567,200	+566,400
Estimated annual value of secondary power at \$9.50 per kilowatt-year.....	76,000	114,000	133,000	133,000	114,000
Net annual cost of producing prime power.....	531,500	783,200	1,123,200	1,491,800	1,927,600
Cost of prime power at 50 percent load factor:					
Per kilowatt-year.....	26.44	23.17	20.80	21.01	22.41
Mills per kilowatt-hour.....	3.02	2.64	2.38	2.40	2.56

83. Subject to such modifications as may be indicated by further studies of local and regional power requirements and to such changes in location and design as may be found desirable after more detailed investigations and studies have been made, the following data describe the contemplated plan of development, the site and general lay-out of which is shown on sheet 3¹ of the accompanying drawings:

Stream flow, U. S. Geological Survey station, 1½ miles below site:	
Drainage area.....	1,640 square miles.
Minimum recorded flow.....	206 second-feet.
Average flow, 1913-39.....	3,350 second-feet.
Maximum recorded flow, June 19, 1916.....	46,200 second-feet.
Estimated peak flow for 1894 flood.....	58,000 second-feet.
Stream flow at dam site:	
Drainage area.....	1,635 square miles.
Regulated prime flow.....	2,694 second-feet.
Spillway design flood.....	160,000 second-feet.
Reservoir:	
Maximum flood pool.....	Elevation 3,480 feet.
Maximum power storage pool.....	Elevation 3,475 feet.
Maximum draw-down.....	150 feet.
Gross storage at elevation 3,475.....	1,888,000 acre-feet.
Usable storage.....	1,441,000 acre-feet.
Dam:	
Type.....	Concrete gravity.
Top of nonoverflow section.....	Elevation 3,480 feet.
Length at top.....	1,800 feet.
Height above stream bed.....	450 feet.
Spillway crest.....	Elevation 3,455 feet.
Spillway control.....	4 84- by 20-foot drum gates.
Concrete.....	2,458,000 cubic yards.
Powerhouse:	
Minimum tail water.....	Elevation 3,043 feet.
Average tail water.....	Elevation 3,048 feet.
Maximum gross head, with average tail water.....	427 feet.
Average head.....	366 feet.
Water capacity at average head.....	5,388 second-feet.
Number of units.....	3.
Total installation.....	142,000 kilowatts or 190,500 horsepower.
Over-all efficiency (assumed).....	85 percent.
Load factor (assumed).....	50 percent.
Power factor (assumed).....	90 percent.

84. The following summary of estimated costs of construction includes 25 percent for engineering, overhead, and contingencies:

Dam (450 feet high).....	\$24,412,000
Reservoir.....	1,883,000
Powerhouse (142,000 kilowatts).....	5,052,000
Total.....	31,347,000

85. The following table develops the estimated costs and annual charges on the project as a Federal development:

Hungry Horse development—Federal costs and annual charges

Investment:	Amount
Construction by Engineer Department.....	\$31,347,000
By other Federal agencies.....	0
Total Federal first cost.....	31,347,000
Interest during construction, 3 percent for ½ the estimated construction period of 4 years.....	1,881,000

¹ Not printed.

Hungry Horse development—Federal costs and annual charges—Continued

Investment—Continued.

Federal property required for right-of-way, 16,000 acres valued at \$6 an acre.....	Amount \$96, 000
Total investment.....	33, 324, 000

Annual carrying charges:

Interest at 3½ percent.....	1, 166, 400
Amortization (interest at 3½ percent):	
Dam and reservoir (based on 50-year life).....	212, 700
Powerhouse (based on average of 30-year life).....	103, 700
Reservoir right-of-way (recoverable).....	0
Operation, maintenance, and overhead.....	142, 000
Total annual charges.....	1, 624, 800

86. The principal benefits to be derived are outlined in the following subparagraphs but only the power output of the proposed development has been evaluated.

(a) *Annual value of power developed:*

Primary power, 71,000 kilowatt-years at \$29.....	\$2, 059, 000
Secondary power, 14,000 kilowatt-years at \$9.50.....	133, 000
Total.....	2, 192, 000

(b) *Increased value of downstream power.*—There would be very little immediate benefit from this source as the plant that would be most directly affected (the Kerr development at outlet of Flathead Lake) is not installed to its possible prime capacity at 50 percent load factor. There will be, however, a large potential value created by the increase in prime flow from the South Fork of the Flathead River from 206 second-feet to 2,694 second-feet. This increase of almost 2,500 second-feet in prime flow at the dam site will increase the available power at all existing and potential downstream power sites on the Clark Fork and Columbia Rivers. The total head thus affected will be about 2,383 feet (nearly 400 feet of which would be in Canada).

(c) *National defense.*—If a national emergency should require peak operation of the mining industry in western Montana, additional power would be necessary; but the Federal Power Commission reports (see par. 88) that under such a condition facilities are now available, or could readily be installed in existing plants, to supply the increased power demand.

(d) *Navigation.*—The regulation of stream flow would be a direct benefit to navigation downstream, especially on Pend Oreille Lake and River.

(e) *Flood control.*—The normal operation of the reservoir for power development would provide an incidental flood-protection benefit. Without reserving a definite amount of storage for flood protection, such protection can usually not be guaranteed without loss of power value. However, because of the nature of the floods in this basin, it is believed that a limited flood protection may be obtained by operation of the reservoir in anticipation of flood run-off as predicted from snow surveys. It is further believed that such limited flood-control benefits may be derived at the small cost of snow surveys with very little, if any, loss of power value.

(f) *Irrigation.*—The resulting benefit to irrigation would be limited mostly to the benefits of cheap power for projects that might have to purchase power for pumping.

87. The estimated annual charges on the development as a Federal project as determined above is \$1,624,800 and the estimated annual value of power that may be developed at the site is \$2,192,000, giving a ratio of annual charges to annual benefits of 1:1.35. The project is, therefore, justified for power development at such time as the entire power output can be disposed of for at least the value used in the above estimates. At such time as the development of additional downstream power is demanded, the margin of justification of this development will

be increased materially. The development of the site is not attractive to private investment under present economic conditions and will probably not become so for a great number of years.

88. The Federal Power Commission in October 1939, reported on a power market survey of the Yellowstone River Basin which includes the area that could be served by the proposed Hungry Horse Dam. The report concludes that existing power facilities are adequate for present and anticipated loads for many years to come. Further, the most feasible source of additional power, if abnormal demands should arise for any reason, is stated to be the installation of a second 56,000-kilowatt unit in the Kerr plant of The Montana Power Co. The Montana Power Co. may purchase, if necessary, power from the Washington Water Power Co. which, in turn, can buy power from the Grand Coulee development, and, therefore, it is clear that a large source of existing and potential power facilities are available to this region.

89. As the source of income for this project is from sale of power, its priority for construction should be based principally upon its relative merits as against other power sites that might serve the same load centers. There are other projects in this area that would be more suitable for the specific purpose of immediate power development. Therefore, although this project will constitute one of the important steps in the ultimate development of Clark Fork Basin, it should be constructed only after satisfactory contracts for the sale of the power have been consummated.

90. *Glacier View site* (see par. 40).—This site is located on Flathead River (North Fork) about 15 miles above its confluence with the Middle Fork. The drainage area tributary to the site is about 1,466 square miles. Available maps and foundation data are not sufficiently complete for determining the most suitable location for structures nor for accurate estimates of their cost. However, on the basis of available information, estimates of cost have been made of possible power developments. The main features, and estimated costs, annual charges and benefits for power developments with three different heights of dam, are compared in table 5.

TABLE 5.—*Glacier View development, summary for power development only*

Item	Scheme I	Scheme II	Scheme III
Type of dam.....	Earth fill	Earth fill	Earth fill
Top of dam, elevation.....	3, 740	3, 640	3, 540
Approximate height of dam above stream bed..... feet	420	320	220
Maximum power storage elevation.....	3, 724	3, 624	3, 524
Gross storage..... acre-feet	4, 760, 000	2, 290, 000	804, 000
Draw-down..... feet	110	100	75
Usable storage..... acre-feet	2, 600, 000	1, 480, 000	557, 000
Regulated flow..... second-feet	2, 704	2, 365	1, 486
Maximum gross head.....	394	294	194
Average head.....	345	249	159
Proposed installation at 50 percent load factor..... kilowatts	135, 000	85, 000	34, 000
Construction cost:			
Dam.....	\$24, 400, 000	\$15, 100, 000	\$8, 900, 000
Reservoir.....	4, 500, 000	3, 100, 000	1, 700, 000
Powerhouse.....	5, 223, 000	4, 271, 000	2, 658, 000
Total.....	34, 123, 000	22, 471, 000	13, 258, 000
Estimated annual charges.....	1, 745, 100	1, 145, 200	658, 800
Estimated annual value of power at site at Bonneville rates.....	2, 047, 500	1, 335, 700	566, 100
Net annual benefit.....	+302, 400	+190, 500	—92, 700

91. The above estimates indicate that a development with dam about 420 feet high or possibly a little higher would be the most desirable from the standpoint of power development alone. For scheme I the ratio of estimated value of power is 1:1.17. There would be incidental benefits in increased value of potential power downstream, of flood control and of navigation and on account of the relatively low cost of storage in this reservoir it has possibilities of increased benefits as a multiple-purpose project. On the other hand, because of possible damages to pasturage for the wildlife of Glacier National Park, owing to flooding of winter feeding grounds, the margin of justification for this development may be entirely obliterated.

IV. IRRIGATION

92. *Irrigable areas.*—In the Flathead Valley upstream from Flathead Lake precipitation is sufficient, except in very dry years, for raising grain on suitable soils, and hay in lowlands along the river, but is not sufficient to raise profitably such crops as potatoes, sugar beets, etc. The continued planting of the land to the same crops is lowering the fertility of the soil, and will eventually cause abandonment of a large part of the area. If irrigated, these lands could produce a variety of crops and thus support a much larger farm population than they do under present conditions.

93. Irrigation in the valley is now limited to an area of about 1,600 acres which receives an inadequate and uncertain supply from Ashley Lake; and to a few small, scattered individual irrigation systems. Approximately 100,000 acres of additional land between Bad Rock Canyon and Flathead Lake are considered to be irrigable.

94. *Benefits.*—The lands of the Flathead Valley produce, without irrigation, fairly good yields of certain crops; but such production is dependent upon summer fallowing in 1 year out of from 5 to 10 years. Average yields for the more common crops are as follows:

Crop	Yield an acre	Unit market value	Crop	Yield an acre	Unit market value
Wheat.....	17 to 24 bushels.....	\$0. 80	Peas.....	15 to 24 bushels.....	\$0. 90
Oats.....	30 to 45 bushels.....	.35	Alfalfa.....	1 to 2 tons.....	8. 00
Barley.....	22 to 40 bushels.....	.55	Grain hay.....	1 to 1½ tons.....	6. 00

95. It is reasonable to assume that under irrigation larger yields of those crops would be obtained, more valuable crops—sugar beets, potatoes, garden truck, etc.—would be raised on at least part of the area, and the necessity for summer fallowing would be eliminated. No reliable data on which to base an estimate of the probable crop increase under irrigation are available. In the Bitterroot Valley the best land, with an adequate irrigation supply and with all irrigation work paid for, is valued at about \$225 an acre, whereas the best land in the Flathead Valley is now worth \$75 an acre. Factors other than irrigation probably account for a part of this difference, but most of it is attributable to the irrigation facilities in the Bitterroot Valley.

96. The Bureau of Reclamation was consulted in connection with the study of irrigating the area between Bad Rock Canyon and Flathead Lake. Several possible methods may be used for irrigating this

area, but none of them may be combined with the proposed Hungry Horse Dam so as to lessen its cost. The following is quoted from a letter dated October 22, 1940, from S. O. Harper, Chief Engineer, Bureau of Reclamation:

* * * this office concludes that irrigation development in the Upper Flathead Valley is not dependent upon the Hungry Horse development either for storage or power and that justification for its construction should be based upon benefits derived from uses other than irrigation, or power for irrigation pumping.

Because the feasibility of the Hungry Horse project cannot be coordinated with irrigation benefits, no further consideration will be given in this report to irrigation plans.

V. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

A. DISCUSSION

97. The data presented in the preceding chapters show: That flooding in the Flathead Valley is of frequent occurrence, but that the resulting damages are relatively small; that hydroelectric power may be developed, either at new sites or by enlargement of an existing plant, at costs comparable to those of recent installations elsewhere in the region; that farming of the valley lands is now carried on with moderate success, but that full utilization of the area is contingent upon irrigation.

98. Various methods for reducing flood damages have been presented. It has been shown that the cost of flood control either by storage in reservoirs constructed solely for that purpose or by enlargement of the outlet of Flathead Lake would be excessive; that top storage for flood control in reservoirs constructed for power development would effect a material reduction in flood damage with little sacrifice of power; and that protection by levees against all but major floods can be accomplished at a cost justified by the resulting benefits. If either the Hungry Horse or Glacier View Dams were constructed for power, incidental lowering of flood heights in the Flathead Valley and around Flathead Lake would result. However, it is concluded that if flood control for this area is to be provided in the near future it must be by levees.

99. Power in large blocks may be developed in this region at the Hungry Horse site, at the Glacier View site or by additions to the existing Kerr plant; and smaller blocks of power may be developed at numerous sites on the river system. Estimates of cost as given herein show that of the two proposed major sites (Hungry Horse and Glacier View) the Hungry Horse development is the cheaper.

100. Assuming that the entire prime power output of the Hungry Horse development could be sold at the rates established for Bonneville power, the annual income from the plant would be 1.35 times the annual costs. If only 80 percent of the prime power were sold, at the same rate, the income would about equal the costs, and the project would be self-liquidating. If a portion of the cost were charged to flood control and to the downstream power plants that would benefit through equalization of the flow of South Fork, the development could be self-supporting at power rates lower than those charged at Bonneville.

101. It has been shown that the annual cost of the Hungry Horse project is \$1,624,800. The annual benefits to flood control by reason of the Hungry Horse development would be \$50,200 (see par. 52).

The net annual cost of Hungry Horse is, therefore, \$1,624,800 minus \$50,200, or \$1,574,600. To justify this cost it would be necessary to sell about 75 percent of the prime power at \$29 per kilowatt-year.

102. Downstream benefits, such as flood control on Lake Pend Oreille and increased power at all plants below Flathead Lake, have not been included in this computation. Additional power downstream will not be required for many years. Flood control on Pend Oreille will depend on the use to which that lake is put—i. e., storage of water for power at Z-Canyon and below or regulation for navigation and recreation.

103. It appears, therefore, that development of the Hungry Horse site, substantially as outlined in scheme IV, table 4, will be justified at such time as there is a market for most of the prime power from the plant. At the present time there are ample generating facilities in the region, and an additional 56,000 kilowatts of capacity can be installed at the Kerr plant at such time as the need for additional power arises. It is obvious, therefore, that the development of the Hungry Horse site will not be warranted for many years.

104. The Bureau of Reclamation is of the opinion that irrigation of lands in the Flathead Valley is not dependent upon the Hungry Horse development.

B. CONCLUSIONS AND RECOMMENDATIONS

105. *Conclusions.*—From the foregoing it is concluded that the development of storage in Hungry Horse Reservoir for flood control is not justified by the resulting benefits; that development for power, with incidental but valuable flood control benefits, will be desirable at such future time as the need for power arises; that protection by levees of the Flathead Valley from all but major floods may be accomplished at a cost commensurate with the anticipated benefits; and that irrigation of the upper Flathead Valley is not dependent upon the Hungry Horse project.

106. *Recommendations.*—I therefore recommend that no project for construction of the Hungry Horse Dam be undertaken at the present time, but that the public lands in the reservoir area be reserved for future storage.

B. C. DUNN,
Colonel, Corps of Engineers,
District Engineer.

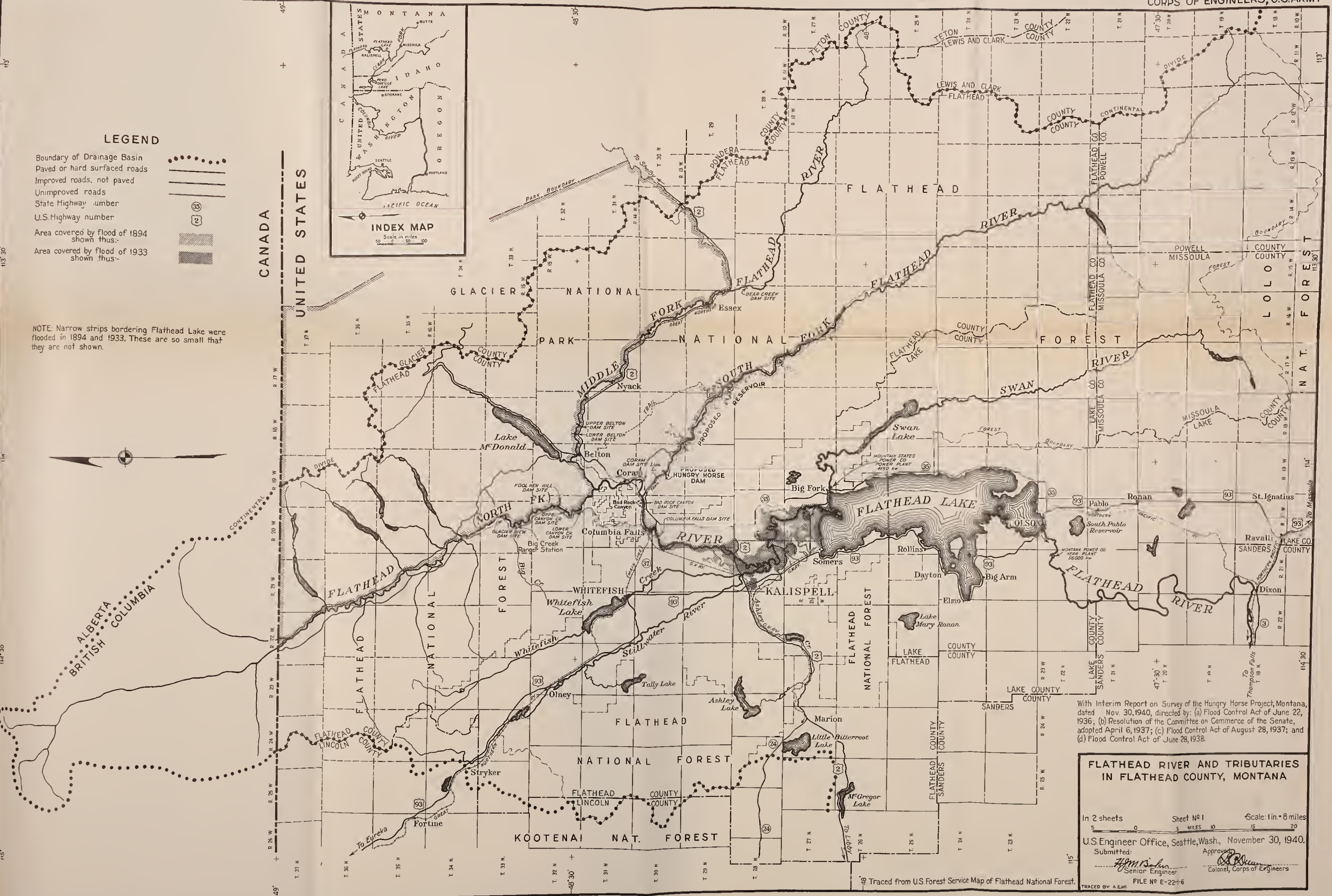
[First endorsement]

OFFICE, DIVISION ENGINEER,
NORTH PACIFIC DIVISION,
Portland, Oreg., January 15, 1941.

To the Chief of Engineers, United States Army.

1. I concur in the report and recommendation of the district engineer.

R. PARK,
Colonel, Corps of Engineers,
Division Engineer.



LEGEND

- Boundary of Drainage Basin
- Paved or hard surfaced roads
- Improved roads, not paved
- Unimproved roads
- State Highway number
- U.S. Highway number
- Area covered by flood of 1894 shown thus: [hatched pattern]
- Area covered by flood of 1933 shown thus: [stippled pattern]

NOTE: Narrow strips bordering Flathead Lake were flooded in 1894 and 1933. These are so small that they are not shown.

With Interim Report on Survey of the Hungry Horse Project, Montana, dated Nov. 30, 1940, directed by: (a) Flood Control Act of June 22, 1936; (b) Resolution of the Committee on Commerce of the Senate, adopted April 6, 1937; (c) Flood Control Act of August 28, 1937; and (d) Flood Control Act of June 28, 1938.

**FLATHEAD RIVER AND TRIBUTARIES
IN FLATHEAD COUNTY, MONTANA**

In 2 sheets Sheet No. 1 Scale: 1 in. = 8 miles

U.S. Engineer Office, Seattle, Wash., November 30, 1940.

Submitted: *H.M. Baker* Senior Engineer Approved: *[Signature]* Colonel, Corps of Engineers

FILE NO E-22-16



